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(54) Title: **TECHNIQUES FOR PERFORMING REMOTE FINANCIAL TRANSACTIONS**

(57) Abstract

The invention provides a method and apparatus for performing financial transactions for a customer, including prompting a customer to provide transaction request data including indicia of a desired transaction, an amount of the desired transaction (100), and a method of payment, receiving the transaction request data, and printing, on sheet stock (72) that is substantially free of recurring form data, watermarks (112A and 112B) and at least a portion of the transaction request data and the recurring form data.

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TECHNIQUES FOR PERFORMING REMOTE FINANCIAL TRANSACTIONSBackground of the Invention

The present invention relates to processing  
5 financial transactions, and in particular, to purchasing  
and producing money orders and pre-paid telephone cards  
and paying bills at locations remote from banks.

Many persons find it convenient to perform  
financial transactions at locations other than banks.  
10 For example, many persons use check cashiers, convenience  
stores, service desks at supermarkets, and other non-bank  
retail agent locations to perform a variety of financial  
transactions. These transactions include cashing checks,  
transferring money via wire transfers, purchasing money  
15 orders and pre-paid telephone debit cards, and paying  
various bills, including utility bills, electronically at  
agent locations. These locations are generally remote  
from banks and are referred to as fringe banks. Cash is  
generally the only form of payment acceptable at such  
20 fringe banks.

Purchasing pre-paid telephone debit cards, the  
market for which is growing rapidly, is possible using  
existing devices. Typically, an apparatus for dispensing  
a pre-paid telephone debit card receives cash from a  
25 customer and dispenses a pre-authorized telephone debit  
card in the amount provided by the customer. Some  
devices receive credit card payment and print the  
information establishing the pre-paid telephone debit  
card on a blank card.

30 Paying bills at fringe banks is also increasing in  
popularity. Several services provide customers with the  
ability to pay bills, such as utility bills, at fringe  
bank locations. The apparatus and procedures for paying  
the bills, however, varies from service to service. For  
35 example, some services require payment to be made in cash  
while others require payment by money order.

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Fringe bank users represent a large and growing segment of the population. Many fringe bank users are persons that do not have a relationship with a bank. Such persons without a banking affiliation constitute approximately 60 million individuals in this country alone. These persons include entitlement benefit recipients, marginally employed persons, blue collar workers, college students, retirees, immigrants, and those suffering from disabling events such as death, divorce, bankruptcy, and credit problems. Of course, an increasing number of persons that have relationships with banks also use the fringe banks for various reasons, including the convenience of location and the hours of availability. Fringe banks may be used for a variety of purposes such as purchasing negotiable instruments and pre-paid debit cards and paying bills electronically. Another example is quasi-cash, which is a transaction type whereby a credit card holder makes a retail purchase of a negotiable instrument in the form of a money order, script, casino chips, wire transfer money order, or certificates.

Several devices currently exist for dispensing money orders at remote locations. Typically, these devices produce money orders by printing customized information onto a pre-printed form. The customized information typically includes, the amount for which the money order may be redeemed and the date of the purchase. The pre-printed form typically includes a serial number or other identifying indicia, an indication of the issuer of the money order and labels that will identify the customized information once it is printed, such as payee, payer, date, and amount. Blank lines may be located in the vicinity of any or all of these labels. Typically, a dollar sign and a numerical representation are also displayed on the preprinted form in the amount for which

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the money order may be redeemed. Devices for dispensing money orders are typically limited only to dispensing money orders and do not perform other functions. Some devices print the date of the purchase of the money order  
5 on the pre-printed form. Still other devices may print a receipt for the purchaser of the money order.

Several problems exist with present devices and procedures for the transactions described above. For example, if pre-printed money order forms are stolen,  
10 then it may be possible to fill in the name of the recipient, amount, and payor signature to redeem a fraudulent money order, exposing a merchant of the money order to claims beyond its resources and the company providing the money order to fraudulently issued money  
15 orders. The risk of theft deters merchants from providing money orders at remote locations, especially if a single merchant is responsible for all purchases from one or more locations. Additionally, many of the money order devices and telephone debit card devices are  
20 restricted to single purpose uses. Different apparatus and procedures for purchasing money orders and pre-paid telephone debit cards and for paying bills require customers to adapt to such apparatus and procedures, and therefore reduce the convenience to the customers. Also,  
25 although many customers have bank accounts and both credit and debit cards, cash is often the only payment option for such transactions. Additionally, there is often an insufficient, if any, accounting mechanism to maintain audit trails, or audit trails and transaction  
30 reporting involve separate data streams.

Customers therefore need improved techniques for purchasing money orders and pre-paid telephone debit cards and for paying bills that are resistant to theft and provide a convenient apparatus, a broad range of  
35 flexible payment options, consistent procedures, and

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audit and transaction reporting trails.

Summary of the Invention

In general, in one aspect, the invention features an apparatus for printing a transaction document and for  
5 use with a host computer. The apparatus includes a data entry device, a processor, paper and a printer. The processor is in selective communication with the data entry device and the host computer and is adapted to receive data from the data entry device indicative of a  
10 desired transaction document and a desired monetary amount and method of payment for the transaction document. The processor is further adapted to provide a data signal to the host for processing, and to produce an output signal. The paper includes a preprinted logo and  
15 is substantially free of recurring form data. The printer is responsive to the output signal from the processor to print indicia of the recurring form data and the amount of the transaction document on the paper.

Implementations of the invention may also include  
20 one or more of the following features.

The transaction document may include a negotiable instrument and the printer may be responsive to the processor output signal to print recurring negotiable instrument data.

25 The paper may be a sheet of paper divided into first, second, and third sections, the first section including a preprinted logo of a telephone service and the third section including a preprinted logo of a money order service. The processor may be further adapted to  
30 receive data indicative of an amount for a telephone card and the printer may be adapted to print recurring telephone card form data on the first section and recurring money order form data on the third section. The sheet of paper may include a pressure-transferable  
35 material disposed on a reverse side of the third section

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of the sheet of paper. The pressure-transferable material may be disposed only on selected areas of the reverse side of the third section of the paper.

The data signal provided by the processor to the  
5 host may be indicative of audit information including at least one of the desired transaction document, the monetary amount, and the method of payment.

The processor may be further adapted to process the method of payment data to determine whether the  
10 method of payment is adequate for the desired amount for the transaction document. The method of payment may be cash, credit card, EBT card, or debit card.

The processor may be adapted to transmit data to the host computer through a telecommunication line over a  
15 network, and may be adapted to receive signals from the host computer indicative of operating commands.

The apparatus may also include an image capturing apparatus with the processor capable of associating a digitized image of a customer with a transaction  
20 indicated by the customer.

The apparatus may also include a signature capturing apparatus with the processor capable of associating a digitized image of a customer's signature with a transaction indicated by the customer.

25 The processor may be capable of determining a numerical watermark based upon the desired amount.

The apparatus may also include a card reader, coupled to the processor, capable of reading information indicative of the method of payment from a card.

30 In general, in another aspect, the invention provides a method of performing financial transactions for a customer. The method includes steps of prompting a customer to provide transaction request data including indicia of a desired transaction, an amount of the  
35 desired transaction, and a method of payment, receiving

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the transaction request data, and printing, on sheet stock that is substantially free of recurring form data, at least a portion of the transaction request data and the recurring form data.

5           Implementations of the invention may also include one or more of the following features.

          The sheet stock may be money order sheet stock with the printing step including printing recurring money order form data on the money order sheet stock to produce  
10 a money order.

          The method may also include evaluating whether the method of payment is valid and sufficient for the desired amount of the transaction.

          The method may accommodate methods of payment of  
15 cash, credit card, debit card, or EBT card.

          The method may also electronically transfer the transaction amount from one account for which the customer has withdrawal approval to another account.

          The printing step may include printing on single  
20 sheet MICR finish paper stock.

          The method may also include printing a receipt indicating the desired transaction, the transaction amount, and the method of payment.

          The method may also include capturing biometric  
25 identification information of the customer, digitizing the biometric identification information, and storing the digitized biometric identification information in association with at least some of the received transaction request data.

30           The prompting step may include displaying an image on a screen or playing an audio message. The method may include electronically storing at least some of the transaction request data for later retrieval.

          The method may also include receiving signals  
35 indicative of operating commands.



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In general, in another aspect, the invention provides a method of performing financial transactions for a customer that includes prompting a customer to provide transaction request data including indicia of a  
5 desired transaction, an amount of the desired transaction, and a method of payment, receiving the transaction request data, and printing, on telephone card sheet stock that is substantially free of recurring telephone card information, indicia of the transaction  
10 amount and of the recurring telephone card data.

Implementations of the invention may also include one or more of the following features.

The method may also include evaluating whether the method of payment is valid and sufficient for the desired  
15 amount of the transaction.

The method may accommodate methods of payment of cash, credit card, debit card, or EBT card.

The method may also electronically transfer the transaction amount from one account for which the  
20 customer has withdrawal approval to another account.

The printing step may include printing on single sheet MICR finish paper stock.

The method may also include printing a receipt indicating the desired transaction, the transaction  
25 amount, and the method of payment.

The method may also include capturing biometric identification information of the customer, digitizing the biometric identification information, and storing the digitized biometric identification information in  
30 association with at least some of the received transaction request data.

The prompting step may include displaying an image on a screen or playing an audio message.

The method may include electronically storing at  
35 least some of the transaction request data for later

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retrieval.

In general, in another aspect, the invention provides an apparatus for communicating with a host computer and printing a money order. The apparatus  
5 includes a display screen, a data entry device, a card reader, a processor, a sheet of paper, and a printer. The processor communicates with the host computer, display screen, data entry device, and card reader and produces an output signal indicative of a desired  
10 monetary amount and method of payment for the money order. The sheet of paper includes a preprinted logo and is substantially free of recurring money order data. The printer responds to the output signal from the processor to print the desired amount and the recurring money order  
15 data on the sheet of paper.

An advantage of the invention, among other advantages, is providing an interactive device, at a remote retail location, that can sell and issue multiple products, such as money orders, telephone cards, scripts,  
20 casino chips, wire transfer money orders, certified checks, or certificates. The invention also has the advantage of providing an interactive device, at a remote retail location, that can provide multiple services, such as wire transfers, wire transfer money orders, and bill  
25 payments.

The invention has a further advantage of providing consistent procedures for fringe banking transactions that are controlled by a central computer.

The invention has an additional advantage of  
30 providing security features to guard against theft, and consumer and merchant fraud. The invention also has the advantage of using biometric information for security.

The invention has a further advantage of providing multiple payment options for purchasing goods or  
35 services.

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The invention has another advantage of providing audit and reporting trails for transactions performed.

Other features and advantages of the invention will become apparent from the following detailed description, and from the claims.

Brief Description of the Drawings

FIG. 1 is an overall system block diagram;

FIGS. 2A-2B are block diagrams of two examples of slave units;

FIG. 3 is an isometric, exploded view of the slave unit of FIG. 2A;

FIG. 4A is a piece of sheet stock before printing;

FIG. 4B is a piece of sheet stock after printing to produce a telephone debit card, a money order, and a receipt;

FIG. 5 is an overall method flow diagram;

FIGS. 6-9 are a flow diagram of an auto open procedure;

FIGS. 10-14 are a flow diagram of a method of purchasing a money order using cash;

FIGS. 15-16 are a flow diagram of a method for accepting a bill for purchasing a money order using cash;

FIGS. 17-21 are a flow diagram of a method for purchasing a money order using a credit card;

FIGS. 22-27 are a flow diagram of a method for purchasing a money order using a debit card;

FIGS. 28-29 are a flow diagram of a method for producing a prepaid telephone debit card;

FIG. 30 is a flow diagram of a method for capturing customers' images; and

FIG. 31 is a flow diagram of an auto close procedure.

Description of the Preferred Embodiments

As shown in FIG. 1, a system 10 for performing financial transactions includes a host computer 12

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coupled to multiple kiosks or slave units 14 and multiple service centers 16. The financial transactions include purchasing transaction documents such as negotiable instruments and telephone debit cards, and performing  
5 services such as paying bills. The host may be coupled to the slave units and service centers either directly through communication lines 18 and 20 respectively, or indirectly through communication lines 22, 23, networks 24, 25 and communication lines 26, 28, respectively. The  
10 networks 24, 25 may be the same network. The single host 12 servicing multiple slave units 14 forms a host-based POS (point of sale) environment. The host 12 also has a switch to provide selective connections to appropriate service centers and a single storage point for all data  
15 for reporting, settlement and retrieval documenting and processing, and audit control. The service centers 16 may be, for example, a merchant bank processor, a credit card and/or debit card validation network, or an electronic benefits transfer (EBT) validation network.

20       The slave units 14, host 12, and service centers 16 may exchange data over large, even global, distances using the networks 24, 25. Either or both of the networks 24, 25 may be an electronic network such as a dial-up, wireless or e-mail network, the Internet, or a  
25 relatively secure financial network.

Software code, stored in computer-readable memory in various parts of the system 10, implements many of the functions performed by the system 10. For example, the system 10 may operate on a variety of platforms such as  
30 Microsoft Windows NT supported by Microsoft development tools, INTEL, DIGITAL, SUN, OS, JAVA, or others. Code-generating procedures (e.g., a rapid application development tool that produces C programming language or a C subset code such as Visual C++ Microsoft Windows  
35 compatible application code) are used to write operating

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commands. These operating commands help the system 10 interact with a customer to perform a service or produce a product according to the customer's request. The customer interface acts as a stand-alone object-oriented 5 encapsulated subsystem. to monitor and manage customers and transaction requests. Each request is handled separately as an individual thread, e.g., within the Microsoft Windows NT operating system. The services are categorized into in flight and stand alone transactions 10 and processed within system vector routing tables. A combination of the host 12 and commands resident in the slave units 14 controls the software.

FIG. 2A illustrates a self-service slave unit 14 adapted to serve as an interface between a customer and 15 the system 10 without being staffed by a clerk. Arrows in the figure illustrate the directions of communication among the various components. Arrows having arrowheads on only one end indicate at least unidirectional communication. As shown, a computer 30 communicates bi- 20 directionally with a touch screen monitor 32, a verification modem 34 and a diagnostics modem 36. Also, a money dispenser 37 may communicate bi-directionally with the computer. A camera 38, microphone 40, card reader 42, personal identification number (PIN) keypad 25 44, signature capture pad 46, mouse 201, additional keypad or keyboard 202, and document validator 48 all supply information to the computer from the customer. The document validator transmits information to a secure safe or vault 50. The computer also supplies information 30 to a main printer 52 and a receipt printer 54. The slave unit 14 may also include a power supply 53. This arrangement provides a flexible apparatus, as described more fully below with respect to FIGS. 3-5, for assisting a customer with financial transactions in a convenient 35 and secure manner.

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FIG. 2B illustrates a another embodiment of the slave unit, namely a staffed slave unit 14', that includes fewer components than the embodiment shown in FIG. 2A. In the embodiment of FIG. 2B, the slave unit  
5 contains the card reader 42, PIN keypad 44, signature capture apparatus 46, touch screen display 32, keypad or keyboard 202, main printer 52, verification modem 34, diagnostics modem 36 and power supply 53. This embodiment provides a flexible slave unit suited for  
10 being staffed by a clerk and for providing money orders and telephone debit cards while reducing the complexity and cost of the slave unit as compared to the embodiment of FIG. 2A. Thus, the slave unit 14' may be customized for desired functions and cost.

15 FIG. 3 shows an isometric view of the slave unit 14 according to the embodiment of Fig 2A. The slave unit 14 may be staffed or unstaffed. If staffed, then an employee assists as the customer by interfacing with the slave unit. The term customer indicates a customer  
20 interfacing with the slave unit directly or indirectly through the employee.

Various features of the slave unit as described below help the slave unit to operate as a stand-alone unit remote from banking locations while providing  
25 numerous convenient services for customers and reducing the risk to the product or service supplier of tampering or theft at the slave unit.

Monitor 32 communicates by-directionally with the computer 30 to interface with the customer. The computer  
30 causes a display screen 200 of the monitor to display information to inform or prompt the customer. The display screen may be a touch-sensitive display screen so that the customer may enter information by touching various areas of the display. Alternatively, the  
35 customer may enter or supply information through other

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means such as the card reader 42, the PIN keypad 44, the microphone 40, the mouse 201, or the other keypad or keyboard 202. A speech recognizer 204 may be provided to convert the customer's speech received by the microphone into computer-recognizable data. Entered information is conveyed to the computer for further processing.

Computer 30 contains a processor 58. The processor receives information supplied by the customer. As described below, the processor may manipulate this information and/or transmit it to other components in the system, including the printers and the host. The processor may also retrieve information from components for processing.

The host 12 delivers operating commands, including reporting, velocity and threshold parameters, to the slave units 14 to control operations, reporting and fraud control. The velocity and threshold parameters set the frequency and amount limits on, e.g., credit card and debit card use at multiple locations, the amount of sales per location and the number of individual sales representative of a typical purchase of money orders. The host accumulates information about the transactions such as the location of the slave unit, the time and day of a transaction, the transaction type and amount, the serial number of any item produced, and the payment method. This information, along with serial numbers assigned by the host for dispensed products, is stored in separate databases and assigned a common trace number. The host retrieves the information to assist with, among other things, audit trails, reporting of transaction trends, accounting, marketing, defending against charge backs and reporting suspicious activity. The host can convey reporting information through local reports, directly to a recipient, or by posting data to a password-controlled electronic bulletin board from which

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daily management reports can be retrieved.

Computer 30 transmits information and instructions to the main printer 52 and a receipt printer 54. Main printer 52 is provided inside the slave unit 14. The  
5 main printer may be, for example, a laser printer, an OEM printer, or an LED printer. The main printer may print products purchased by the customer such as pre-paid telephone debit cards and money orders, as well as receipts for money orders and telephone debit card  
10 purchases, and receipts for services such as paying bills. Signals received from the computer control the main printer to produce money orders and pre-paid telephone debit cards according to information supplied by the customer. Preferably, the main printer contains  
15 only black magnetic ink character recognition (MICR) ink. The main printer ejects completed money orders and telephone debit cards into trough 60.

The receipt printer 54 prints a summary of the customer's transactions. These transactions may include  
20 bill payments and wire transfers, with written records of telephone debit card purchases and money order purchases being supplied by the main printer 52. The receipt printer may also print summaries of telephone debit card and money order purchases to provide a convenient, all-  
25 inclusive receipt. Additionally, the receipt printer may provide a script receipt for cash owed to the purchaser that the purchaser redeems for cash at a specified location. Preferably, the receipt printer prints on rolled paper as is common in the industry. Completed  
30 receipts may be ejected into the trough 60, or through a receipt slot 206.

The customer pays for products or services using the card reader 42, the PIN keypad 44, or by depositing negotiable instruments or currency into the vault 50  
35 through slot 62 and the document validator 48. The card



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reader could include a wand 64, capable of reading bar-codes and attached to the reader through a flexible cable, a MICR reader and a variable optical character recognition (OCR) reader. The card reader reads numerous  
5 types of cards such as credit cards, private/company-branded cards, debit cards, off-line debit cards, smart cards, electronic benefits transfer cards, or other cards containing information such as in a magnetic strip or a bar code. These cards convey information relating to how  
10 the customer wants to pay for the desired transaction. Additionally, such as the case with a smart card, the information from the card may also indicate preferences by the customer such as a usual amount for a pre-paid telephone debit card, a preferred recipient of a money  
15 order, or a regular recipient of an electronic bill payment. The PIN keypad 44 is used by the customer to enter a PIN corresponding to the card read by the card reader. The document validator ascertains the amount of money inserted into the vault, or, in conjunction with  
20 the computer, verifies the validity of a check or other negotiable instrument inserted into the vault.

The money dispenser 37 may provide money to the customer. The money dispenser may provide the customer with money as change for a transaction, or as the goal of  
25 the transaction itself, such as a withdrawal from the customer's savings account. The money may be in the form of, for example, coins or bills.

Speakers 66 help the slave unit 14 to interact with the customer. The speakers produce tones or play  
30 pre-recorded messages or synthesized messages to prompt the user to act such as by entering information, removing products produced by the slave unit, or inserting currency or other negotiable instruments into the currency slot. Speaker holes 67 provided in areas of the  
35 housing near the speakers allow the customer to hear the

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sounds produced by the speakers.

The slave unit 14 is equipped with various security devices including a PIN keypad 44, and biometric identification apparatus that may authenticate and verify the client. The biometric identification apparatus shown in FIG. 3 are a camera 38, a signature capture pad 46, the microphone 40 and associated language-independent speech recognition circuitry, and a fingerprint capture pad 203. The fingerprint capture pad 203 may use photo capture, or capture through a chip device or other electronic means. The biometric identification apparatus, especially the camera 38, may also capture other portions of the client, such as the client's face or retina, for verification. The camera may be an imaging device such as an infrared sensor. Some or all of the information obtained using the security devices may be stored in association with an electronic facsimile of a sales ticket representing transactions performed by the slave unit for the customer.

A customer uses the PIN keypad 44 to enter a PIN corresponding to a debit card or credit card, or the like, used in the card reader 42. To secure the PIN during transit over communication lines, the PIN entered on the PIN keypad is encrypted using DES-certified encryption, or other certified encryption programs, before being transmitted from the slave unit to the host.

The camera 38 captures an image of the customer at the slave unit. The camera digitizes the captured image and transmits the digitized image to the processor. Alternatively, the processor digitizes the image. Either the computer or, preferably, the host, stores the digitized image in association with some or all of the information provided by the customer. For example, the host may associate a trace number with the digitized image along with some or all of the customer's

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information.

A shelf 68 supports the signature capture pad 46. The slave unit prompts the customer to enter the customer's signature on the signature capture pad 46.

- 5 This pad may take several forms, such as a pad that is responsive to interruptions in an electromagnetic field in the area of the pad or to pressure exerted on the pad. An appropriate stylus 210 may be provided.

- 10 The signature capture pad 46 digitizes the customer's signature and transmits the digitized signature to the processor. Alternatively, the computer digitizes the signature. Either the computer or, preferably, the host stores the digitized signature in association with some or all of the information provided  
15 by the customer but separately from the digitized image of the customer. The host may associate the same trace number as used for the digitized image of the customer with the digitized signature. Both the digitized signature and image of the customer are available for  
20 retrieval and processing e.g., for compliance with the Bank Secrecy Act provisions dealing with reporting suspicious cash transactions, for compliance with merchant bank regulations, and to support document action requests.

- 25 The microphone 40 receives verbal information from the customer. The customer's speech is digitized and stored in association with the selected transactions. Preferably, the host associates the digitized speech with the same trace number associated with the customer's  
30 image and signature.

- Verification modem 34 and diagnostics modem 36 communicate bidirectionally with the computer 30. Using the verification modem 34, the processor 58 accesses databases, retrieves stored information, and compares the  
35 customer's entered information with the retrieved

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information. If, for example, the entered information corresponds to a valid account number and is associated with the entered PIN, then the verification modem communicates with the computer to allow further  
5 processing. Accessed databases may reside within a local memory such as a memory of the computer, or may be remotely located and accessed using a telecommunication line either directly or through the network. The verification modem also determines whether the customer's  
10 account has a current balance or a currently-available credit limit at least as large as the amount indicated for the desired purchase, wire transfer, or other selected transaction.

Each slave unit 14 includes various security  
15 measures. For example, security "keys" or codes prevent unauthorized access to internal areas of the slave unit. Another key validates the location of the slave unit using automatic number identification (ANI) proprietary serialization obtained from the telephone network. For  
20 example, the host may search the slave unit for an activation code prior to allowing operation of the slave unit. This helps to ensure that the slave unit is in an approved location and is a proper slave unit for that location. Messages sent from the slave unit may also be  
25 encrypted. The slave unit builds a daily audit file for all transactions. The audit file contains a transaction log, captured signatures and images, and an electronic sales ticket. This information is uploaded daily to the host 12, during an auto close procedure (described  
30 below), and archived for retrieval processing.

The diagnostics modem 36 uses remote access service to periodically send polling signals to the computer to monitor the status of, and affect, the various components of the slave unit. For example, the  
35 diagnostics modem determines whether the slave unit has

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been compromised and takes appropriate actions. If, for example, the housing is opened without the computer receiving an appropriate security key (e.g., corresponding to a service request), then the diagnostics  
5 modem instructs the slave unit not to process any further transactions until the slave unit receives an authorization code from one of the data entry devices at the slave unit or from the host. Thus, the slave unit would not transfer funds, print money orders or telephone  
10 debit cards, pay bills, or perform any other transactions if the slave unit has been compromised. Additionally, the diagnostics modem may determine the status of input/output peripheral components such as the data entry devices and the main printer, check on or alter  
15 characteristics of the slave unit components or access codes, provide assistance to the customer, and revise the functions of the slave unit such as by downloading software code to the slave unit.

The slave unit is ergonomically designed to help a  
20 customer purchase transaction documents, such as negotiable instruments and telephone debit cards, and to perform services, such as paying bills, in a convenient and easy manner. A housing 56 contains the slave unit components and is configured to present an aesthetically  
25 pleasing and functionally convenient and efficient device for the customer. The housing presents the slave unit components at convenient heights and locations for customers. The display screen location permits easy viewing. A housing face plate 57 made from thermo-  
30 injected ABS plastic provides unique customization abilities such as unusual shapes and designs. The face plate 57 is curved to tilt the display screen up. The angle of projection of the display screen may be adjusted by pushing on the monitor. A baffle 59 holds the monitor  
35 steady in the housing but permits the monitor to move in

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response to the customer pushing on the monitor. The housing contains the card reader 42, PIN keypad 44, slot 62, trough 60, keypad or keyboard 202, receipt slot 206 and signature capture pad 46 at locations that the customer may easily access. The keyboard 202 may be removable from the housing and connected to the computer 30 through a flexible cable. Shelf 68 is sized, shaped and located at a height for laying down and writing on items. The housing contains the speakers 66, speaker holes 67 and microphone 40 at locations to deliver and receive sounds effectively. The housing also includes secure doors 61 to allow a person access to the interior of the slave unit to repair components, replenish slave unit supplies or remove items from the slave unit such as cash and other negotiable instruments in the vault 50. An addition (not shown) may be mounted on top of the housing and used for advertising and marketing.

Additional features of the slave unit 14 facilitate changes and slave unit networking. Although most slave units will have fixed interiors, Unistrut® fasteners may be used to provide convenient modifications, such as for replacing one component with a larger component or for rearranging components to accommodate enhanced functionality. A modular design for the slave unit permits cascading or linking of multiple slave units in a variety of configurations.

FIG. 4A illustrates a preferred embodiment of a piece or sheet of paper stock 70 for use in the main printer 52. The main printer has a container adapted to hold the paper stock. In this embodiment, the paper stock is single sheet, 28 lb., MICR finish, 8.5"x11" paper stock, although other types of paper stock are within the scope of the invention. The sheet stock is divided into a top section 72, a middle section 74, and a bottom section 76. Perforations 78 and 80 separate the

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three sections. In this embodiment, after the appropriate printing, the top section includes a pre-paid telephone debit card, the middle section is a receipt, and the bottom section is a money order.

5           The paper stock 70 is substantially free of recurring form data. Recurring form data includes indicia that is repeated, such as by printing by the main printer, for every money order form. These indicia include text blocks such as "pay to," "amount,"  
10 "signature," "Money Order," "good world wide," "not valid over five hundred U.S. dollars," "void after thirty days," or equivalents, blank lines associated with appropriate text blocks, the issuer's name, and the payor's name. These indicia may also include serial  
15 numbers or other indicia that are present on, but unique to, each money order.

          The top section 72 contains a logo 82 for a telephone debit card. The logo 82 is inside a perforated border 83. The logo 82 is preprinted and contains  
20 several colors making its reproduction difficult.

          The middle section 74 contains preprinted information that is common from purchase to purchase. This information may include labels and blanks for the date, the signature of the payor, the amount of the money  
25 order, and the issuing authority that will actually pay the amount indicated.

          The bottom section 76 contains a preprinted money order logo 84 containing several colors. The bottom section also contains background colors and designs  
30 (e.g., including watermarks) that further make reproduction of the sheet stock difficult.

          If the sheet stock is stolen, only substantially blank sheet stock (i.e., substantially free of recurring form data) will be obtained. Time and expensive  
35 equipment would be needed in order to convert the paper

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stock into a valuable product.

FIG. 4B illustrates the sheet stock 70 after printing by the main printer 52 to produce a telephone debit card and receipt, a money order receipt, and a money order. As shown, the main printer 52 has produced a telephone debit card and receipt on top section 72. The main printer has printed, or "burned in," a border 86 to delineate the telephone debit card. In accordance with the amount paid by the customer, the main printer prints the amount 88 that the telephone debit card is worth. A telephone number 90, such as a toll free 800 number, and PIN 92 are provided on the telephone debit card. The customer dials the telephone number and enters the PIN to use the telephone service for which the customer paid. Use instructions are preprinted on the reverse side of the telephone debit card. A receipt indicating the amount of the telephone debit card is printed in area 93 on the top section 72. The main printer will only print on the sheet stock 70 in accordance with approved transactions. Thus, the main printer may produce only a money order and its receipt, or only a telephone debit card and its receipt, leaving portions of the sheet stock 70 in their substantially blank, unprinted state.

The main printer 52 prints a receipt for the money order in the middle section 74. The receipt includes indications of an amount 100 and a serial number 94 of the money order. Instructions for obtaining a refund for the money order are preprinted on the reverse side of the middle section 74.

The main printer 52 has also printed the necessary information to produce a money order on the bottom portion 76 of the sheet stock 70. This information includes the serial number 94, an indication of how much to pay 96, the amount of the money order written out in



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words 98 and in numbers 100, a "pay to" prompt 101 and a corresponding line for inserting the name of the person or entity to whom the money order is due, an indication labeling the merchant's name and address 102, a prompt  
5 106 and corresponding blank line for entry of an "authorized signature or initials," the date 108, a code 110 for the money order written in E 13 B characters in MICR ink, and graphics image format elements identifying the money order as a legitimate document.  
10 The code 110 conforms to the ANSI II requirements for printing to automatically route through the federal reserve's clearing house for checks. The serial number is determined by software in the system, and also appears in the MICR characters. Use restrictions and information  
15 is preprinted on the reverse side of the bottom section 76.

A pressure-transferable material is deposited on a back side, opposite the side shown in FIGS. 4A-4B, of the sheet stock. If the middle section 74 and bottom section  
20 76 are folded about perforation 80 and the customer writes on the top section in the areas for the payee, and the customer's signature, then the customer's writing is transferred to the receipt on the middle section. The pressure-transferable material may be deposited over the  
25 entire back of the sheet stock, or only in desired areas.

The main printer 52 has also printed numerical watermarks 112A and 112B. These numerical watermarks are determined by the processor based on the amount of the money order and are similar to a modulus-10 check. If  
30 the bottom section of the sheet stock is folded over such that numerical watermark 112A overlies numerical watermark 112B, a validation code is produced by viewing the numerical watermarks through the sheet stock. For example, if the sheet stock is folded over and held up to  
35 a light, the numerical watermarks may form a numerical

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indication of the amount of the money order.

FIG. 5 shows a simplified block diagram of an overall method 114 according to the present invention. As shown, the method starts at step 116 and proceeds to step 117 where the system 10 performs auto open initializing. The method 114 proceeds to steps 118 and 120 where the customer selects a transaction and enters transaction data. At step 122, the system 10 evaluates the transaction data and either approves or rejects the requested transaction. At step 124, the method 114 performs approved operations. At step 126, the method 114 asks the customer whether the customer desires more transactions. If the customer wants more transactions, then the method 114 returns to step 118. Otherwise, from step 126 the method 114 performs an auto close step 127, and then ends at step 128.

As shown in FIGS. 6-9, the auto open step 117 prepares the system 10 for operation. At step 127 of FIG. 6, the auto open step 117 begins after the system has performed an auto close step (described below) and proceeds to step 604 to initialize a modem. At step 606, the system checks whether the modem is operational. If it is not, then a retry counter is incremented at step 608 and checked at step 610 to determine whether three checks of the modem have been made. If three checks have been made, then an error message is provided at step 612 and the host is called at step 614. If three checks have not been made, then another check is made at steps 604 and 606. When it is determined at step 606 that the modem is operational, the host is dialed at step 615.

Retry processes, like that in steps 608, 610, 612 and 614, are provided throughout the method for command functions and customer responses. These processes are provided in anticipation of undesired system, software, or customer actions and are attempted to provide or

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induce appropriate responses, such as displaying error messages or providing another opportunity to perform the desired act. The retry processes are generally similar even though some cancel or void transactions, allow for  
5 only one retry, have time limits for responses, or include other features. Therefore, these processes are often referred to below as retry processes with associated step numbers only.

Step 615 on FIG. 6 to step 634, including steps  
10 626 and 628 on FIG. 7, dial the host 12, check whether the host 12 has been accessed, and perform a security check. If the host has not been accessed at step 616, then a retry process is performed at steps 618 to 622. If host access is obtained at step 616, then a security  
15 check is performed at step 624 and verified at step 626. This security check routine uses automatic number identification (ANI) to verify that the slave unit requesting access to the host is an authorized slave unit in an authorized location. The security check routine  
20 also verifies the merchant's identification and the slave unit's identification. At step 626, an inquiry is made as to whether the security check verified authorized information. If it did not, then a retry process is performed at steps 628, 630, 632, and 634.

25 At steps 636 to 646, the host 12 downloads a daily workfile to the slave unit 14 and the system 10 verifies the downloading. The daily work file contains a daily assignment of serial numbers for money orders and a daily assignment of PINs corresponding to specific dollar  
30 amounts of connect time for telephone debit cards. At step 638, an inquiry is made as to whether the slave unit 14 received the daily assignments. If the daily assignments were not received, then a retry process is performed at steps 640, 642, 644 and 646.

35 Step 648 in FIG. 7 to step 666 in FIG. 8 prepare

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the main printer 52 and receipt printer 54. The main printer 52 and the receipt printer 54 are initialized at step 648. At step 650, an inquiry is made as to whether the main printer 52 and the receipt printer 54 are on  
5 line. If either printer is not on line, then a retry process is performed at steps 652, 654, 656, and 658. If the main printer 52 and receipt printer 54 are on line, then inquiries are made at steps 660 and 662 as to whether the printers have paper and ink cartridges,  
10 respectively. If either printer does not have paper or an ink cartridge, then the operator is called at step 664 or step 666 to notify the operator of the deficiency.

At step 668 in FIG. 8 to step 714 in FIG. 9, the touch screen 32, card reader 42, signature capture pad 46  
15 and PIN pad 44 are initialized. After each initialization attempt, a check is made to verify whether the initialization was successful. Successful initializations allow for further processing, while unsuccessful initializations have corresponding retry  
20 processes. Once all of the initializations are successfully performed, the auto open step 117 finishes at step 716 in which the slave unit 14 is ready for operator input.

Returning to FIG. 5, at step 116 the customer  
25 initiates interaction with the slave unit 14. The customer may initiate interaction in a variety of ways. For example, the customer may push a button on the slave unit such as a button on the key pad, PIN keypad, or touch-sensitive screen. The customer may also swipe or  
30 insert a card such as a debit card or a credit card into the card reader, or scan a bar code using a wand provided on the slave unit. Alternatively, the customer may speak into the microphone. Using these same techniques, the customer may also enter or supply information to the  
35 slave unit. If the customer does not enter appropriate

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information within a predetermined time, the method proceeds to step 128 and terminates.

At step 118, the customer selects a desired transaction based on prompts by the computer 30 sent to the monitor and/or through the speakers 66. To select a transaction, the customer selects an area on the touch-sensitive screen, pushes appropriate buttons on the keypad, or speaks into the microphone.

At step 120, the system prompts the customer to enter transaction data. Again, these prompts may be audible through the speakers, visual on the screen, or both. The customer enters the requested data through any of the data entry devices on the slave unit such as the microphone, the screen, the keypad, or the PIN keypad. The prompts provided by the system to the customer depend on the selected transaction.

The transaction data will generally include an amount of money and a desired payment method. To select a desired payment method, the customer may enter an account number, such as a savings account number or a checking account number. The customer may use the card reader 42 to read information from any card having a machine-readable code such as a magnetic stripe or bar code indicating an account containing funds or credit for the transaction. The customer may also insert currency, checks, money orders or the like into the document validator. The customer enters the amount of money for the transaction using the key pad or by selecting areas on the touch-sensitive screen displaying the desired amount.

The customer enters additional data depending on the transaction selected. For example, for wire transfers and bill payments, the customer enters information designating to whom or to what account number the system should transfer the indicated funds.

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The slave unit 14 may serve as the origination point or destination of a wire transfer of funds. For the slave unit to function as the origination point, a sending customer selects the wire transfer service, the payment option, and the destination of the transfer. The sending customer then enters information according to a series of prompts on the slave unit 14 that sends the information through the host 12 to a wire transfer company such as Continental, Western Union, or Money Gram. The wire transfer company places the transaction onto an electronic bulletin board. The slave unit 14 provides the sending customer with a trace number confirming the availability of the funds, and issues a three minute telephone debit card for the sending customer to use to contact the receiving customer. As the destination of the transfer, the receiving customer provides the trace number to the slave unit 14. The slave unit 14 sends the trace number through the host 12 to the electronic bulletin board to confirm availability of the funds. Once the availability of the funds is confirmed, the host 12 directs the slave unit 14 to queue a money order to be printed. Thus, as the destination of a wire transfer of funds, the slave unit operates in a host-based or host-controlled environment as opposed to a terminal-based system.

The system 10 may receive and store biometric identification information associated with the customer. This biometric information may include an image of the customer captured by the camera, the customer's voice captured through the microphone, or the customer's signature captured through the signature capture pad. The system may prompt the user to speak into the microphone, or to write the customer's signature on the signature capture pad, or to stand within the range of the camera so that the system may capture, digitize and

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store these data.

At step 122, the system 10 evaluates the transaction data and any biometric information. The system 10 uses the transaction data to determine whether to approve or reject the transaction requested by the customer. The system 10 may also verify the biometric information supplied by the customer. For example, using the trace number the system may retrieve and compare the customer's digitized image, signature or speech with stored digitized information associated with a negotiable instrument provided or an account number entered. If the customer is authorized to use the indicated account or the negotiable instrument provided is valid, and the customer's account or negotiable instrument has sufficient funds or credit, then the system approves the requested transaction. Otherwise, the system rejects the requested transaction.

At step 124, the system 10 performs all approved transactions. For example, the system communicates through the network to the host to transfer funds for a wire transfer, to pay bills, or to withdraw funds from electronic accounts to pay for money orders or telephone debit cards to be printed at the slave unit. The main printer then prints the telephone debit card, money order, and receipt.

FIGS. 10-14 show a specific example of steps 118, 120, 122, and 124 of method for purchasing a money order with cash at a staffed slave unit 14. As shown in FIG. 10, when the slave unit 14 is ready for operations at step 717, an employee logs on at step 718 by entering a password. If the password is invalid as determined at step 720, then a retry process is performed at steps 722, 724, 726, and 728. If the password is valid, then the main menu is displayed on the touch screen 32 at step 730. The main menu prompts the customer to select from

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among several transaction options 732, 734, and 736 shown as purchasing a money order, purchasing a telephone debit card and paying bills, respectively. Other transaction options are possible, such as purchasing a wire transfer  
5 money order.

When the employee selects to purchase a money order at step 738, an inquiry as to whether the money order database has been accessed is made at step 740, as shown in FIG. 11. If the database is not successfully  
10 accessed, then a retry process is performed at steps 742, 744, 746, and 748 (see FIGS. 10-11). If the database is successfully accessed, then the employee is prompted at step 750 to select a payment option displayed on the touch screen 32. The touch screen 32 displays the  
15 available payment options, shown as cash 752, credit card 754, debit card 756 or EBT card 758. Other payment options may also be included.

When the employee selects the cash payment option at step 760, the slave unit 14 attempts to access a cash  
20 module. If, at step 762, it is determined that the cash module was not successfully accessed, then a retry process is performed at steps 764, 766, 768, and 780.

The employee is prompted to enter the desired amount for the money order at step 782 shown on FIG. 12.  
25 Step 784 determines whether the customer enters an amount. If the customer does not enter an amount within one minute, then the method proceeds through step 786 and returns to the menu at step 788. Otherwise, step 790 checks whether the amount entered is five hundred dollars  
30 or less. If the amount exceeds five hundred dollars, step 791 displays a message to the customer and step 792 prompts the customer to reenter the amount. If the customer reenters the amount, then step 794 directs the method back to step 790. If the customer does not enter  
35 the amount in one minute, then the method proceeds



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through step 796 and returns to the main menu at step 798.

An entered amount of five hundred dollars or less is displayed on the touch screen 32 at step 800. Step 5 802 prompts the customer to touch "enter" if the displayed amount is correct. The method proceeds from step 804 through a retry process at steps 806, 808, 810, and 812 if the customer does not touch "enter." Otherwise, the method proceeds to step 814 (shown on FIG. 10 13).

At step 814, the slave unit 14 attempts to access and display a fee schedule. Step 816 directs the method to a retry process in steps 818, 820, 822, and 824 if the fee schedule is not accessed and displayed. If the fee 15 schedule is accessed and displayed, then the method proceeds to step 826.

At step 826, the touch screen 32 prompts the user to touch "enter" to accept the fees and continue. When the customer touches "enter," the money order is queued 20 at step 828 to be printed.

Once the money order is in the print queue, a command is sent at step 830 to the main printer 52 to print the money order. If the money order is not printed, step 832 directs the method through a retry 25 process of steps 834, 836, 838, 840, and 842. At step 842, the daily transaction log is updated.

If the main printer 52 prints the money order, then step 832 directs the method to step 844, shown in FIG. 14, where the slave unit 14 sends a command to the 30 host 12 to store sales information electronically. If the sales information is not stored, then step 846 directs the method through a retry process at steps 848, 850, 852 and 854. If the sales information is stored, then step 846 directs the method to return to the main 35 menu at step 856.

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FIGS. 15-16 show steps for the acceptance of bills, such as for purchasing a money order with cash, and the calculation and delivery of change owed to the customer. Similar to operations discussed above, FIG. 15 shows steps 1278 through 1313 that help ensure that the customer selects a dollar amount less than or equal to five hundred dollars, and that the fee schedule is accessed and displayed for, and accepted by, the customer.

As shown in FIG. 16, at step 1314 a command is sent to the document validator 48 (i.e., bill acceptor) so that it will accept currency up to the amount of the money order plus fees plus one hundred dollars. If the customer inserts a check, money order, or other negotiable instrument, the document validator 48 reads the document and provides information to the computer 30, which determines whether the instrument is sufficient for the requested transaction. If insufficient currency is accepted by the document validator 48, then a retry process is performed at steps 1318 through 1324. Otherwise, the amount of the money order plus the fees plus the one hundred dollars is calculated at step 1326.

Steps 1328 to 1354 help to ensure that the customer receives appropriate cash back. If at step 1328 the cash back, which equals the total amount of currency supplied minus the amount of the money order minus the fees, is not calculated, then a retry process is performed at steps 1330 through 1340. At step 1342, a command is sent to the receipt printer 54 to print a receipt for the cash back amount, if any. The customer redeems the receipt at a cashier. If the receipt is not printed, then steps 1346 through 1354 perform a retry process.

Once the receipt is printed at step 1344, or if no cash back was owed, the transaction is stored at step

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1356 in a database for later retrieval. The method then returns to the main menu at step 1358.

FIGS. 17-21 show steps 118, 120, 122 and 124 of the method for the purchase of a money order using a credit card. Steps 858 through 878 on FIG. 17 are similar to steps 730 through 750 on FIGS. 10-11. The steps shown in FIG. 17 prepare the slave unit 14 to accept an indication of a desired payment option. The method continues on FIG. 18 where the customer is presented with several payment options 880 through 886 similar to options 752 through 758 shown in FIG. 11.

In this example, the customer selects the credit card payment option at step 888. At step 890, it is determined whether the credit card database is successfully accessed (including the fee structure and procedural commands), with a retry process performed at steps 892 to 898 if the attempt is unsuccessful and proceeding to step 900 if the attempt is successful.

At step 900 the customer is prompted to enter an amount. If the customer does not enter an amount, then step 902 directs the method through a retry process at steps 904 to 910. Otherwise, step 902 directs the method to step 912 in FIG. 19.

As shown in FIG. 19, the customer may enter an amount of five hundred dollars or less. If the entered amount exceeds five hundred dollars, then step 914 directs the method to step 916 where an appropriate message is displayed for the customer. A retry process is then performed at steps 918 to 922. If the entered amount is does not exceed five hundred dollars, then step 914 directs the method to step 924 where the amount is displayed. At step 926, the touch screen 32 prompts the customer to touch "enter" if the amount displayed is correct, with the method continuing to step 928 once "enter" is touched.

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At step 928, the slave unit 14 attempts to access a fee schedule. If the fee schedule is not accessed, then step 930 directs the method to perform a retry process at steps 932 to 940. If the fee schedule is  
5 accessed, then the fee is displayed at step 930 and the method proceeds to step 942 where the customer is prompted to touch "enter" to continue. As seen in steps 942 through 952, if the customer does not touch "enter", then a retry process is performed at steps 946 to 952.  
10 If the customer does touch "enter," then the method proceeds to step 954 on FIG. 20.

As shown in FIG. 20, the customer is prompted to swipe the credit card at step 954. Steps 954 through 968 show that if the customer swipes the card, the method  
15 proceeds to step 968 and performs a retry process if the customer does not swipe the credit card through the card reader 42.

At steps 968 and 970, the information contained on tracks I and II of the credit card is read and validated.  
20 A logical redundancy is performed. If field layouts are within guidelines of ANSI II standards, then individual fields are further validated. Specifically, the system performs a modulus-10-check-digit (MOD check) calculation to validate the account number, performs a check  
25 validation and verification (CVV) operation, and determines whether the current date is beyond the expiration date. If the information satisfies these criteria, then the system requests authorization from an appropriate credit card authorization network for the  
30 indicated amount. When the system receives an approval code from the issuer of the card authorizing the purchase, the system stores a purchase record based on the code. If the information is not validated, then from step 972 the method proceeds to step 974 where the  
35 customer is informed that the transaction using the card

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was denied. At step 976 the customer is prompted to swipe another card (or the same card again). If a card is swiped, then from step 978 the method returns to step 968. Otherwise, the method performs a retry process at  
5 steps 980 to 986. If the credit card information is validated, then the method proceeds from step 972 to step 988 (shown in FIG. 21).

As shown in FIG. 21, at step 988 the customer is prompted by a message displayed on the touch screen 32 to  
10 write the customer's legal signature on the signature capture pad 46. At steps 990 through 1002, if the customer does not sign, then a retry process is performed with the transaction being voided at step 1002. If the customer does sign, then the money order is queued to  
15 print at step 1004.

At step 1006, a command is sent to the main printer 52 to print the money order. At steps 1008 through 1016, if the main printer does not print the money order, then a retry process is performed.  
20 Otherwise, the customer's signature is stored electronically at step 1018 for transmission to the host 12 and the method returns to the main menu at step 1020.

FIGS. 22-27 show the purchase of a money order using a debit card. As shown in FIG. 22, this  
25 transaction begins similar to using cash or a credit card. From the main menu at step 1022 the customer selects from the payment options 1024, 1026, and 1028. The customer selects a prompt purchase money order option 1030, and an attempt is made to access a quasi-cash  
30 database at step 1032. An unsuccessful attempt causes steps 1034 through 1040 to perform a retry process while a successful attempt causes step 1042 to prompt the customer to select a payment option.

As shown in FIG. 23, if debit card option 1048 is  
35 selected at step 1052 from the payment options 1044

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through 1050, then an attempt is made to access a debit card database at step 1054. An unsuccessful access attempt causes steps 1056 through 1062 to perform a retry process. A successful attempt causes step 1064 to prompt  
5 the customer to enter an amount.

Step 1066 in FIG. 23 through step 1128 in FIG. 24 help to ensure that the customer enters an amount that is equal to or less than the five hundred dollar limit for money orders, similar to the case of using a credit card.  
10 Retry processes are performed following unsuccessful steps with the transaction being voided or cancelled, error messages displayed, the host called, or the customer returned to the main menu, or a combination of these, as appropriate. An entered amount not exceeding  
15 five hundred dollars is displayed (step 1084) and accepted (steps 1086 and 1088) by the customer touching the touch screen 32, and appropriate fees are displayed for the customer (steps 1098 and 1100) to accept by swiping the debit card through the card reader 42 (steps  
20 1110 and 1112). Information on tracks I and II of the debit card is read at step 1126 before continuing to step 1130 shown in FIG. 25.

As shown in FIG. 25, at step 1130 the customer is prompted to enter the PIN corresponding to the swiped  
25 debit card. If no PIN is entered, then a retry process is performed. If a PIN is entered, then a validity check is performed at step 1144. The validity check includes verifying the expiration date of the debit card, performing a CVV operation, and performing a MOD check  
30 and verifying the PIN.

As shown in FIG. 26, if the validity check fails at step 1146, then step 1148 informs the customer that the card has been denied and step 1150 prompts the customer to try another card. The method then returns to  
35 step 1112 shown in FIG. 24. If the validity check is

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successful at step 1146, then the transaction is queued for authorization at step 1160.

A command is sent to a modem to call the appropriate debit card authorization network at step 1162. At step 1164, the modem calls the network. Steps 1166 through 1172 perform a retry process for failed calls to the network.

At step 1174 a successful call to the network is used to determine whether authorization is received. If no authorization is received, steps 1176 through 1188 allow the customer to swipe another card. If authorization is still not received, then the transaction is terminated at step 1186 and information regarding the transaction is stored at step 1188. If authorization is received at step 1174 or step 1182, then the method proceeds to step 1190 shown in FIG. 27.

As shown in FIG. 27, the money order is queued to print at step 1190. At step 1192, a command is sent to the main printer 52 to print the money order. IF the money order does not successfully print at step 1194, then steps 1196 through 1204 perform a retry process. If the money order is printed at step 1194 or the retry process voids the transaction, then the transaction is stored electronically in a database at step 1206 for transmission to the host 12. The method then returns to the main menu at step 1208.

FIGS. 28-29 show steps involved in purchasing a prepaid telephone debit card. As shown in FIG. 28, after the customer selects an option from the main menu to purchase a debit card, step 1210 prompts the customer to select the telephone dollar value from among amount options 1212, 1214, and 1216. Amount options other than those shown are possible, and may be determined by either the manufacturer or the host 12. At step 1218 a \$20 telephone debit card has been selected by the customer,

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which prompts an attempt to access a telephone debit card PIN database at step 1220. Three attempts are made to access the PIN database due to the retry process at steps 1224 through 1230. When the database is accessed at step 5 1222, a PIN corresponding to a \$20 telephone debit card is selected at step 1232. The transaction is logged at step 1234 and the telephone debit card is queued to print at step 1236 after the appropriate payment process is completed.

10 As shown in FIG. 29, once the telephone debit card is queued to print, a command is sent at step 1238 to the main printer 52 to print the telephone debit card. If the telephone debit card did not print at step 1240, then a retry process is performed at steps 1242 through 1248. 15 If the telephone debit card is printed as step 1240 with the PIN, the toll free 800 number, and the dollar value of the connect time in local currency, then the transaction data is stored electronically in a database at step 1249. The method then returns to the main menu 20 at step 1250.

FIG. 30 illustrates steps for capturing images. Steps 1252 through 1262 give the customer opportunities to sign the customer's name on the signature capture pad 46. At step 1264, a command is sent to the camera 38 to 25 capture the customer's image. If the image is not captured, then a retry process is performed at steps 1268 through 1274. Once the image is captured at step 1266, the image is stored in an electronic database, at step 1276, for uploading to the host 12 during the auto close 30 procedure.

Referring again to FIG. 5, at step 126 the system 10 asks the customer whether the customer wants to request more transactions. If the customer wants to select more transactions, then the method returns to step 35 118. The system takes into account the funds allocated



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for previously approved transactions when verifying further requested transactions. If the customer does not want more transactions, then the method proceeds to step 127 to perform the auto close operation shown in FIG. 31.

5       As shown in FIG. 31, at the end of the day 1360, as determined by a variable time set, the slave unit 14 contacts the host 12 at step 1362. The slave unit 14 attempts to transmit the daily log, the signature file, captured images and sales tickets to the host 12 at steps  
10 1364, 1374, 1376, and 1378 respectively. If any of these transmission attempts fails, then a retry process is performed at steps 1366 through 1372. Once all of the transmissions have been performed, the slave unit 14 powers down at step 1380 and waits for an auto open  
15 signal.

Returning to FIG. 5, at step 128 the method 114 terminates. The customer may terminate the method at any time by entering a cancel request such as by pushing a cancel button. When the method terminates, the slave  
20 unit returns the customer's debit card or credit card if the card reader is of the type that retains the card during processing.

The method described above is illustrative only and not limiting. Therefore, steps may be rearranged,  
25 added, or omitted from the method described. Additionally, many of the functions described within a particular step may be performed in steps other than the ones indicated above.

The system 10 implements many of the functions  
30 described above using software code. Of course, the system may implement many of these functions using software, firmware, hardware, hardwiring, or combinations of any of these. Many functions described above with respect to particular components of the system may be  
35 implemented in other components throughout the system.

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For example, the microphone may digitize the customer's speech, or the computer may do so. This, of course, is only one example of many possibilities of moving functions among components of the system.

5           Other embodiments are within the scope of the following claims.

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What is claimed is:

1. An apparatus for printing a transaction document and for use with a host computer, the apparatus comprising:
  - 5 a data entry device;
  - a processor, in selective communication with the data entry device and the host computer, adapted to receive data from the data entry device indicative of a desired transaction document and a desired monetary
  - 10 amount and method of payment for the transaction document, the processor further adapted to provide a data signal to the host for processing, and to produce an output signal;
  - paper including a preprinted logo, the paper being
  - 15 substantially free of recurring form data; and
  - a printer responsive to the output signal from the processor to print indicia of the recurring form data and the amount of the transaction document on the paper.
2. The apparatus of claim 1 wherein the
  - 20 transaction document includes a negotiable instrument and wherein the printer is responsive to the processor output signal to print recurring negotiable instrument data.
3. The apparatus of claim 2 wherein the paper is a sheet of paper divided into first, second, and third
  - 25 sections, the first section including a preprinted logo of a telephone service and the third section including a preprinted logo of a money order service, and wherein the processor is adapted to receive data indicative of an amount for a telephone card and the printer is adapted to
  - 30 print recurring telephone card form data on the first section and recurring money order form data on the third section.

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4. The apparatus of claim 3 wherein the sheet of paper includes a pressure-transferable material disposed on a reverse side of the third section of the sheet of paper.

5 5. The apparatus of claim 4 wherein the pressure-transferable material is disposed only on selected areas of the reverse side of the third section of the paper.

6. The apparatus of claim 1 wherein the data  
10 signal provided by the processor to the host is indicative of audit information including at least one of the desired transaction document, the monetary amount, and the method of payment.

7. The apparatus of claim 1 wherein the  
15 processor is further adapted to process the method of payment data to determine whether the method of payment is adequate for the desired amount for the transaction document.

8. The apparatus of claim 7 wherein the method  
20 of payment is cash.

9. The apparatus of claim 7 wherein the method of payment is credit card.

10. The apparatus of claim 7 wherein the method of payment is EBT card.

25 11. The apparatus of claim 7 wherein the method of payment is debit card.

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12. The apparatus of claim 1 wherein the processor is adapted to transmit data to the host computer through a telecommunication line over a network.

13. The apparatus of claim 1 further comprising  
5 an image capturing apparatus and wherein the processor is capable of associating a digitized image of a customer with a transaction indicated by the customer.

14. The apparatus of claim 1 further comprising a signature capturing apparatus and wherein the processor  
10 is capable of associating a digitized image of a customer's signature with a transaction indicated by the customer.

15. The apparatus of claim 1 wherein the processor is capable of determining a numerical watermark  
15 based upon the desired amount.

16. The apparatus of claim 1 further comprising a card reader, coupled to the processor, capable of reading information indicative of the method of payment from a card.

20 17. The apparatus of claim 1 wherein the processor is further adapted to receive signals from the host computer indicative of operating commands.

18. A method of performing financial transactions for a customer, the method comprising steps of:  
25       prompting a customer to provide transaction request data including indicia of a desired transaction, an amount of the desired transaction, and a method of payment;  
          receiving the transaction request data; and

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printing, on sheet stock that is substantially free of recurring form data, at least a portion of the transaction request data and the recurring form data.

19. The method of claim 18 wherein the sheet  
5 stock is money order sheet stock and the printing step includes printing recurring money order form data on the money order sheet stock to produce a money order.

20. The method of claim 19 further comprising  
evaluating whether the method of payment is valid and  
10 sufficient for the desired amount of the transaction.

21. The method of claim 20 wherein the method of payment is cash.

22. The method of claim 20 wherein the method of payment is credit card.

15 23. The method of claim 20 wherein the method of payment is debit card.

24. The method of claim 20 wherein the method of payment is EBT card.

25 25. The method of claim 18, further comprising electronically transferring the transaction amount from one account for which the customer has withdrawal approval to another account.

26. The method of claim 18, wherein the printing step comprises printing on single sheet MICR finish paper  
25 stock.

27. The method of claim 18, further comprising

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printing a receipt indicating the desired transaction,  
the transaction amount, and the method of payment.

28. The method of claim 18, further comprising:  
capturing biometric identification information of  
5 the customer;  
digitizing the biometric identification  
information; and  
storing the digitized biometric identification  
information in association with at least some of the  
10 received transaction request data.

29. The method of claim 18, wherein the prompting  
step comprises displaying an image on a screen.

30. The method of claim 18, wherein the prompting  
step comprises playing an audio message.

15 31. The method of claim 18 further comprising  
electronically storing at least some of the transaction  
request data for later retrieval.

32. The method of claim 18 further comprising  
receiving signals indicative of operating commands.

20 33. A method of performing financial transactions  
for a customer, the method comprising steps of:  
prompting a customer to provide transaction  
request data including indicia of a desired transaction,  
an amount of the desired transaction, and a method of  
25 payment;  
receiving the transaction request data; and  
printing, on telephone card sheet stock that is  
substantially free of recurring telephone card  
information, indicia of the transaction amount and of the

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recurring telephone card data.

34. The method of claim 32 further comprising evaluating whether the method of payment is valid and sufficient for the desired amount of the transaction.

5           35. The method of claim 33 wherein the method of payment is cash.

36. The method of claim 33 wherein the method of payment is credit card.

10           37. The method of claim 33 wherein the method of payment is debit card.

38. The method of claim 33 wherein the method of payment is EBT card.

15           39. The method of claim 32, further comprising electronically transferring the transaction amount from one account for which the customer has withdrawal approval to another account.

40. The method of claim 32, wherein the printing step comprises printing on single sheet MICR finish paper stock.

20           41. The method of claim 32, further comprising printing a receipt indicating the desired transaction, the transaction amount, and the method of payment.

42. The method of claim 32, further comprising:  
capturing biometric identification information of  
25 the customer;  
digitizing the biometric identification



- 47 -

information; and

storing the digitized biometric identification information in association with at least some of the received transaction request data.

5           43. The method of claim 32, wherein the prompting step comprises displaying an image on a screen.

44. The method of claim 32, wherein the prompting step comprises playing an audio message.

45. The method of claim 32 further comprising  
10 electronically storing at least some of the transaction request data for later retrieval.

46. An apparatus for communicating with a host computer and printing a money order, the apparatus comprising:

15           a display screen;

a data entry device;

a card reader;

a processor that communicates with the host computer, display screen, data entry device, and card  
20 reader and produces an output signal indicative of a desired monetary amount and method of payment for the money order;

a sheet of paper, including a preprinted logo, that is substantially free of recurring money order data;  
25 and

a printer that responds to the output signal from the processor to print the desired amount and the recurring money order data on the sheet of paper.

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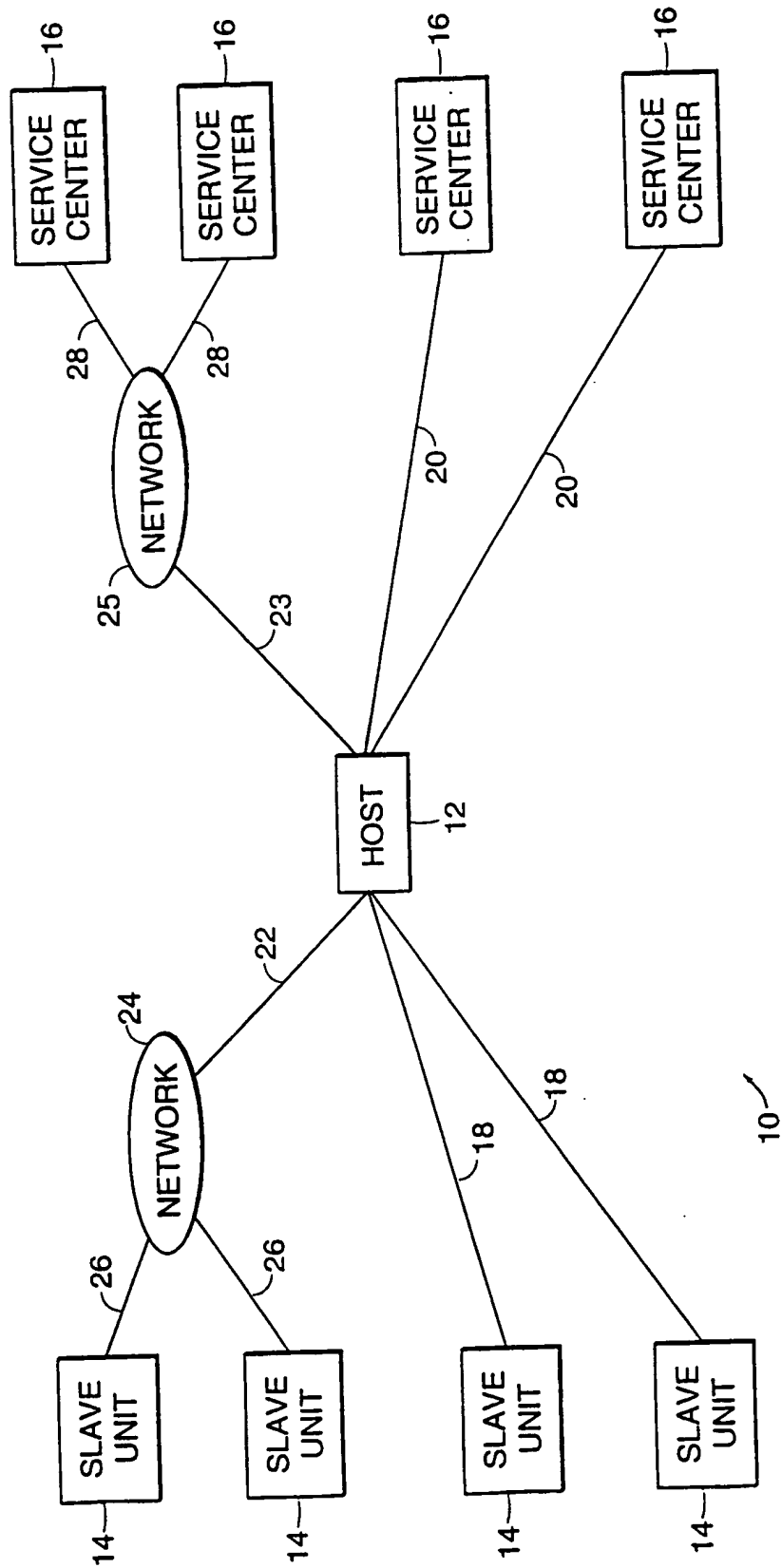


FIG. 1

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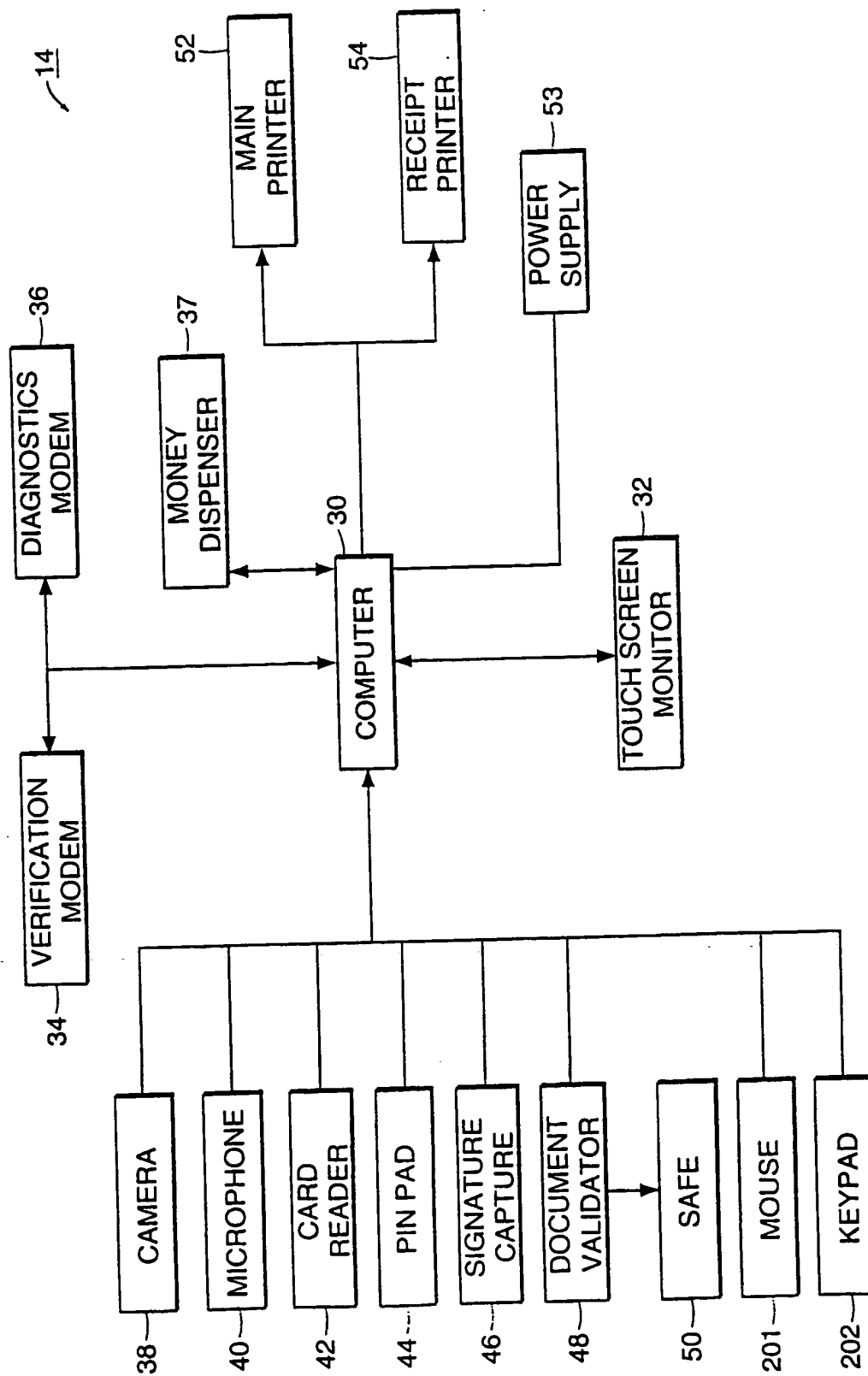


FIG. 2A

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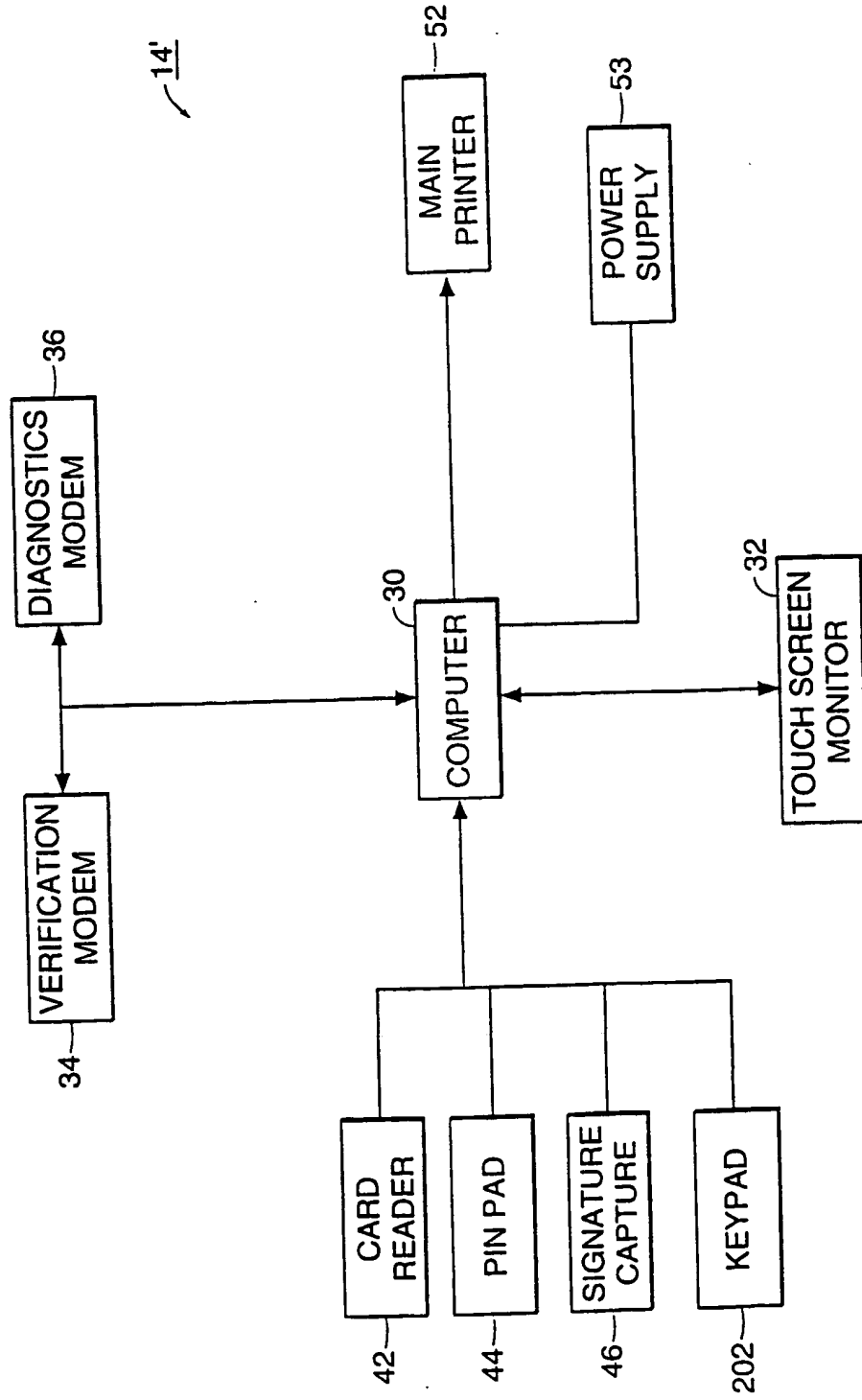


FIG. 2B

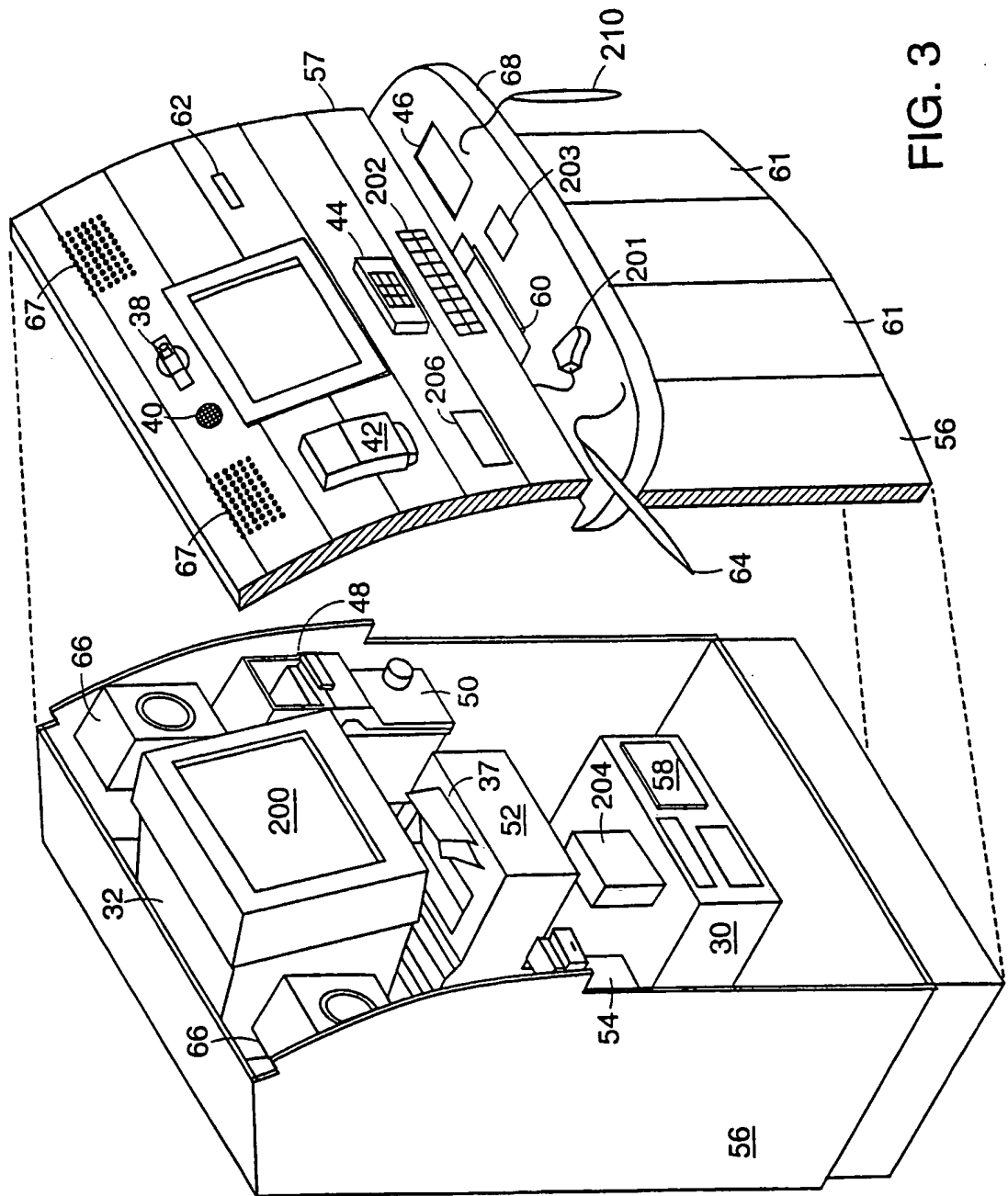


FIG. 3

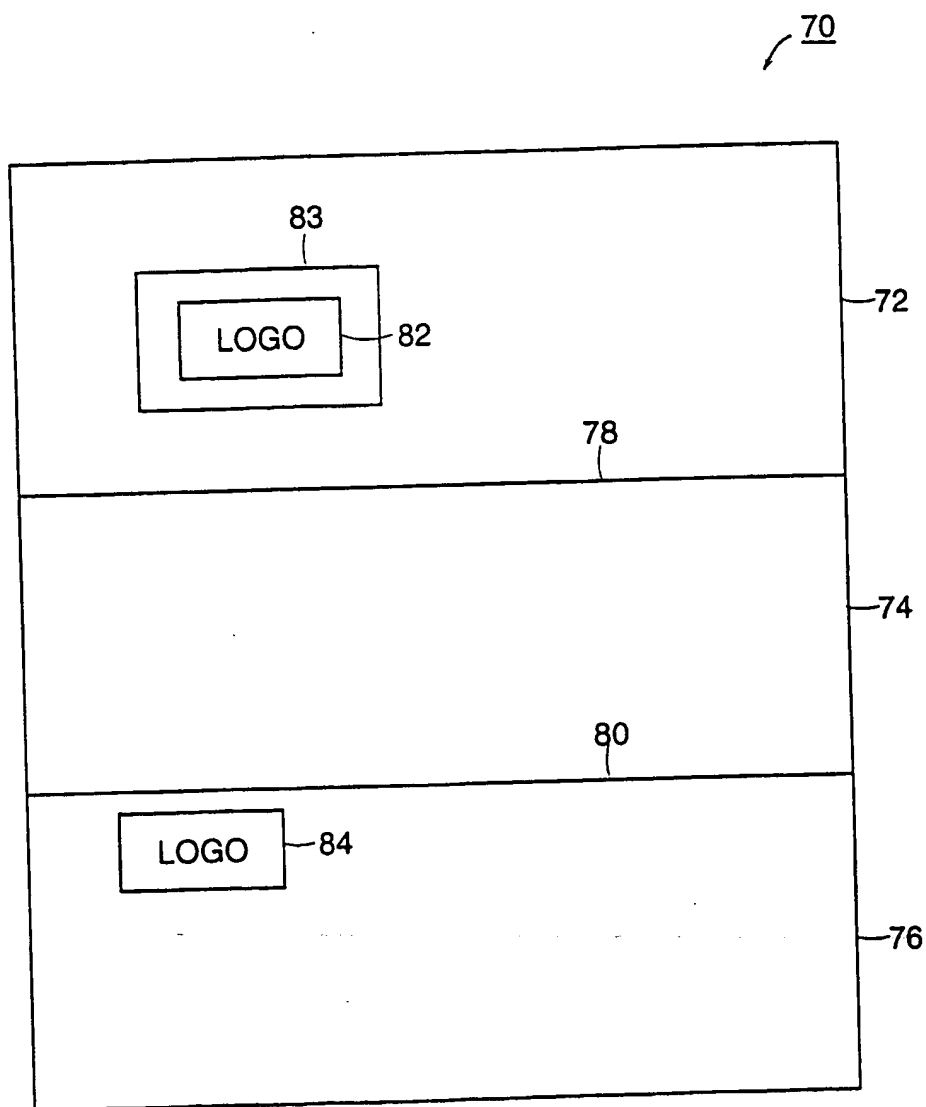


FIG. 4A

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<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="display: flex; justify-content: space-between;"> <span>88 \$10.00</span> <span>90 1-800-123-4567</span> </div> <div style="text-align: center; margin: 5px 0;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">LOGO</div> <span>82</span> </div> <div style="display: flex; justify-content: space-between;"> <span>PIN # 000-000-000</span> <span>83</span> </div> </div> <div style="margin-top: 5px; text-align: center;"> <span>92</span> </div>			<span>72</span>
<span>78</span>			<span>74</span>
<span>100</span> AMOUNT		SERIAL NO. <span>94</span>	<span>80</span>
<span>108</span> DATE	MERCHANT <span>102</span>	SERIAL NO. <span>94</span>	<span>76</span>
<div style="border: 1px solid black; padding: 2px; display: inline-block;">LOGO</div> <span>84</span>	<div style="display: flex; justify-content: space-between;"> <div> <span>96</span> PAY             </div> <div> <span>98</span> TWENTY FIVE             </div> <div>               DOLLARS             </div> </div>		<span>100</span> \$25.00
<span>101</span> PAY TO _____		<span>112A</span> <div style="border: 1px solid black; padding: 2px; display: inline-block;">MARK</div>	<span>112B</span> <div style="border: 1px solid black; padding: 2px; display: inline-block;">MARK</div>
<span>110</span> MICR CODE 		AUTHORIZED SIGNATURE OR INITIALS—106	

FIG. 4B

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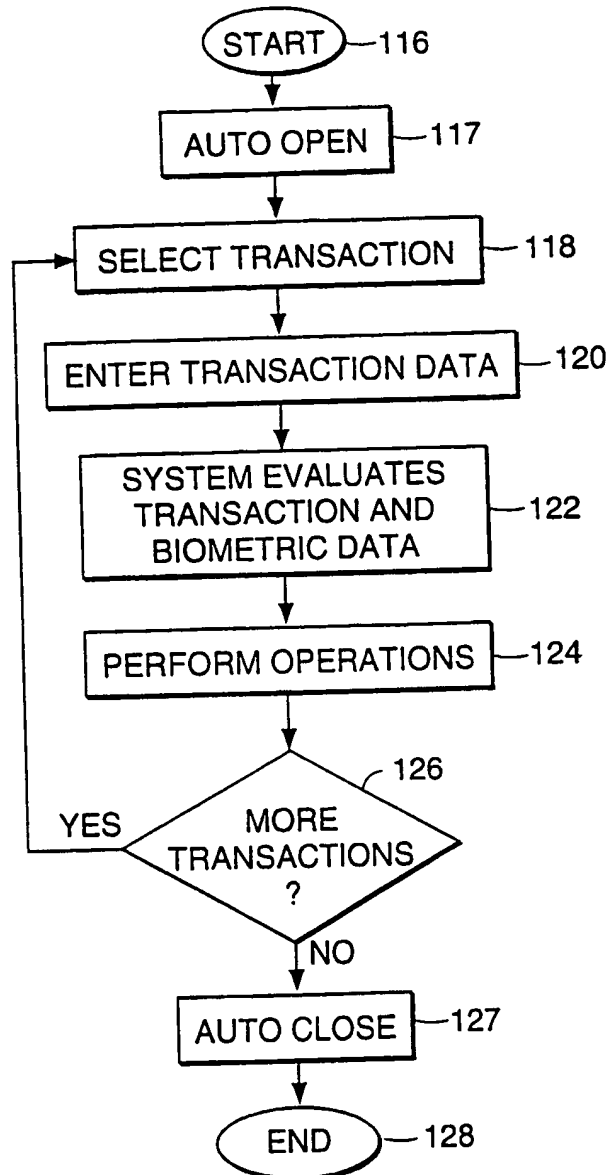
114

FIG. 5



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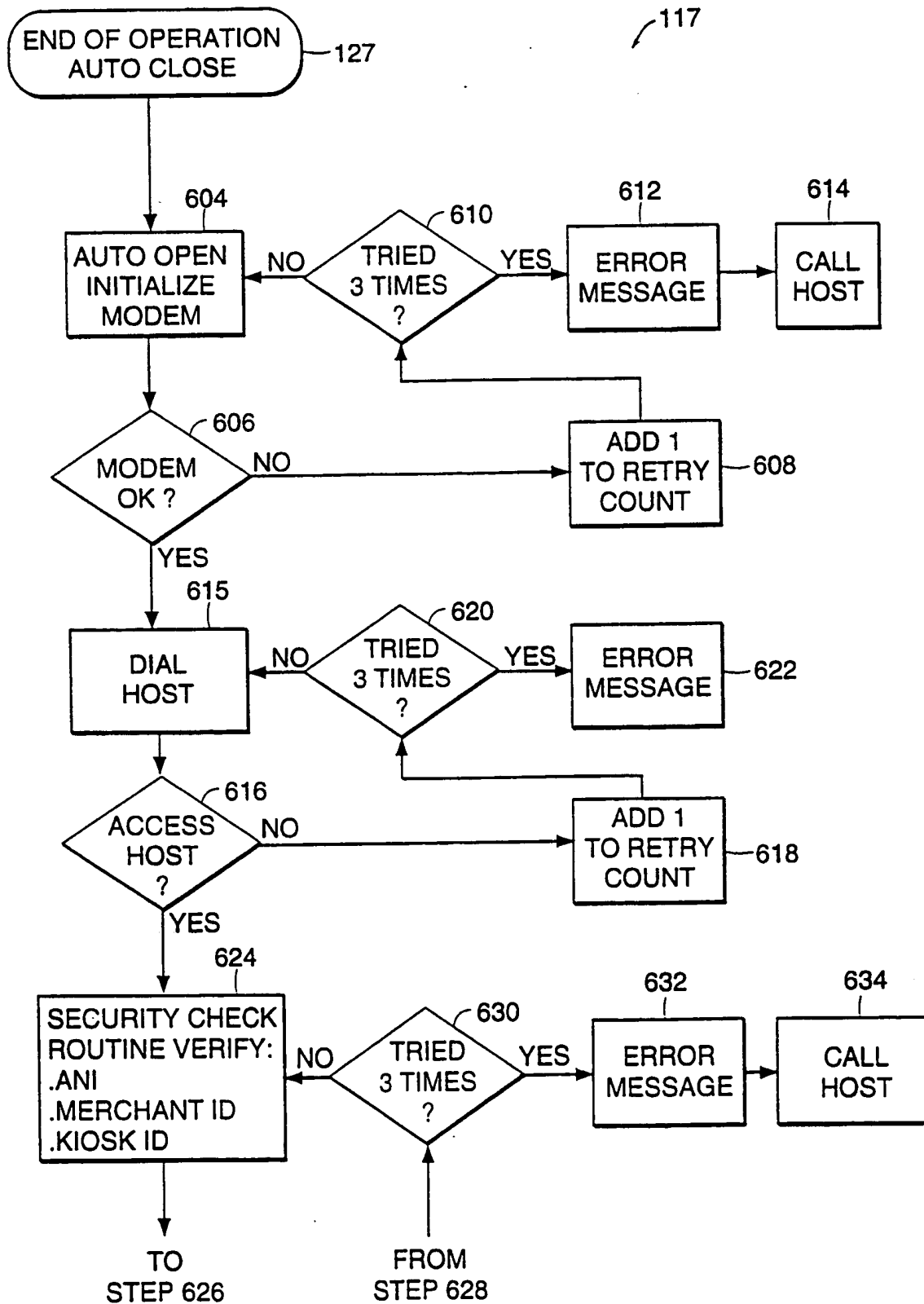


FIG. 6

SUBSTITUTE SHEET(Rule 26)

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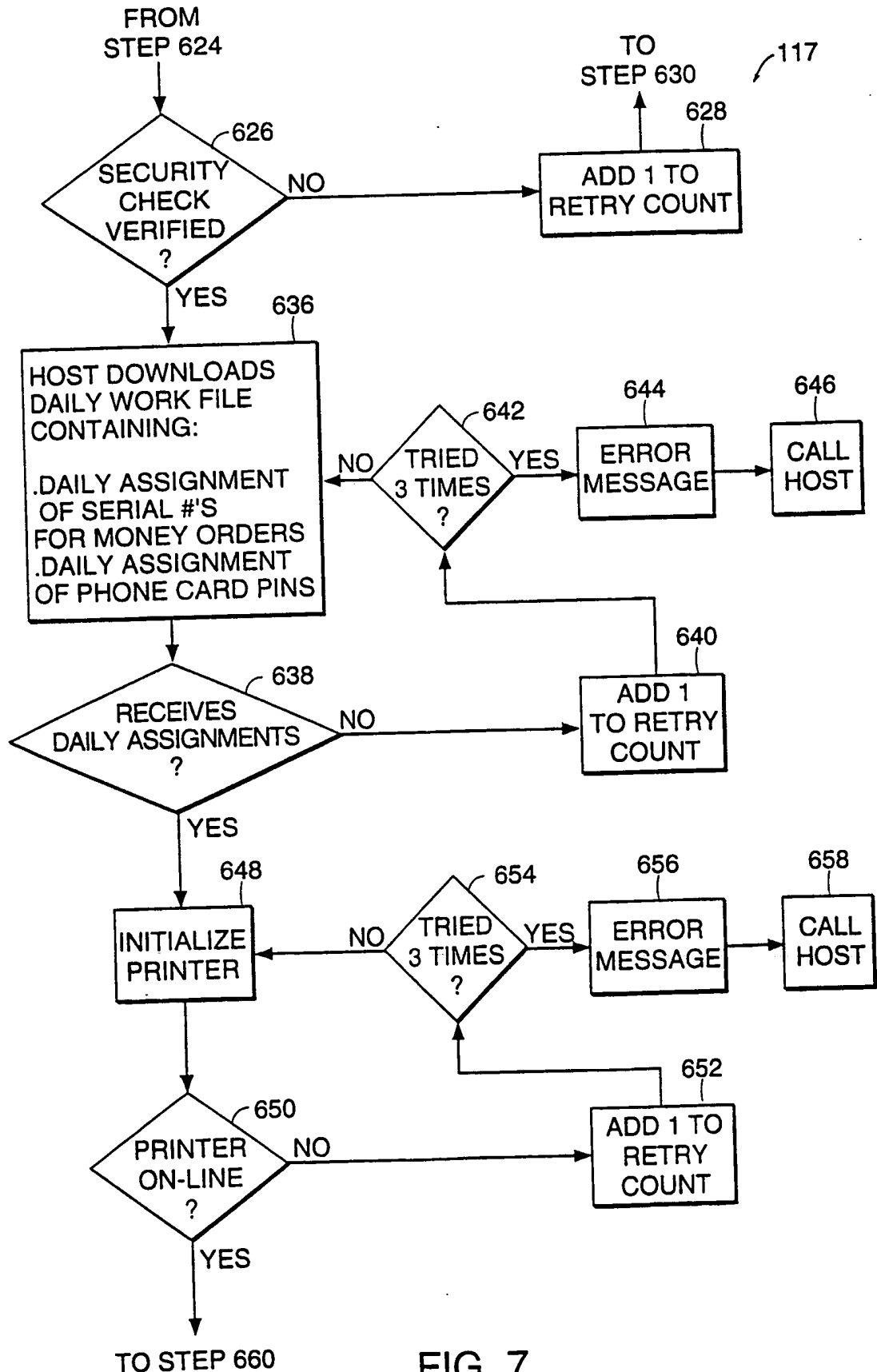


FIG. 7

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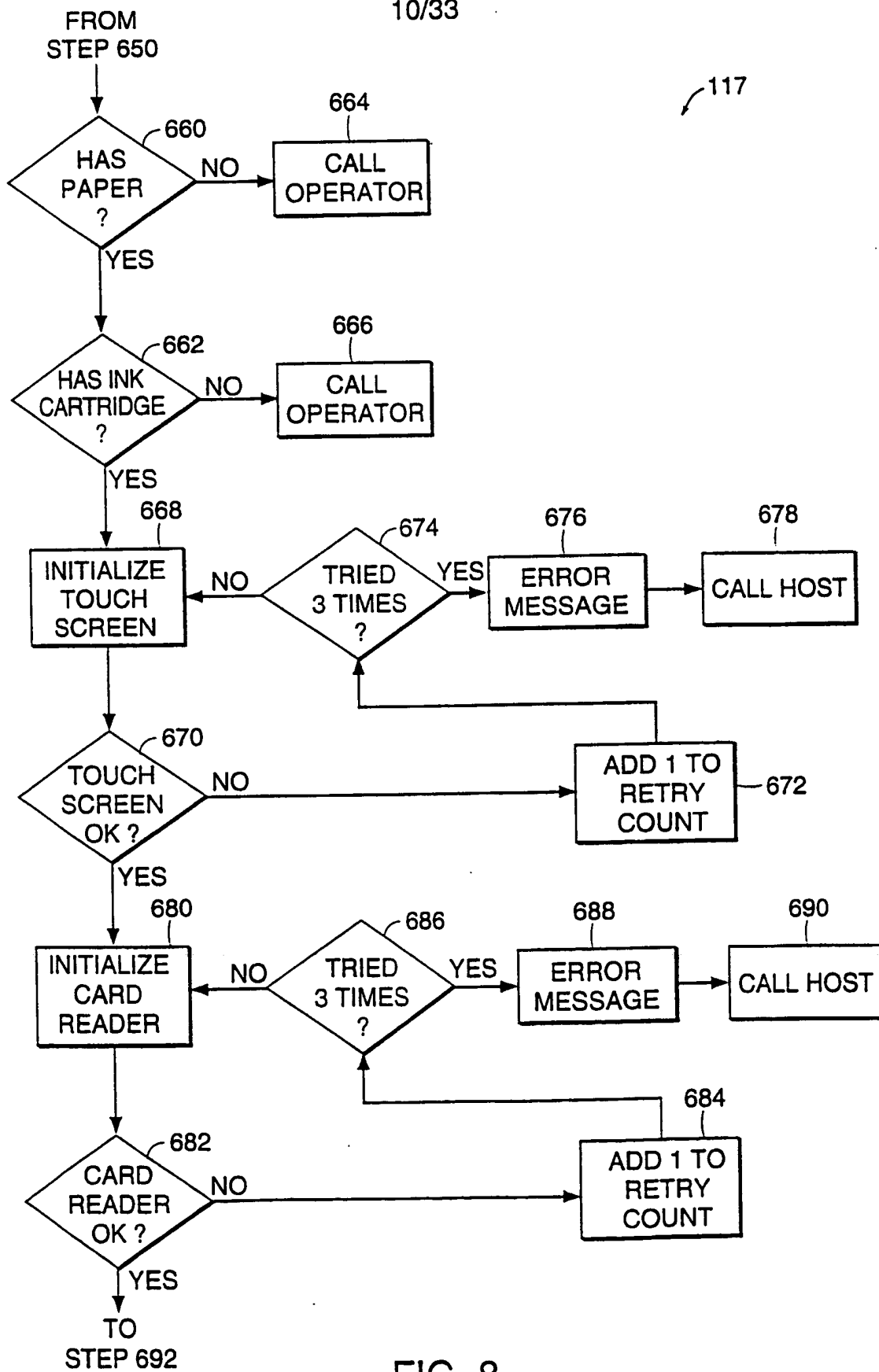


FIG. 8

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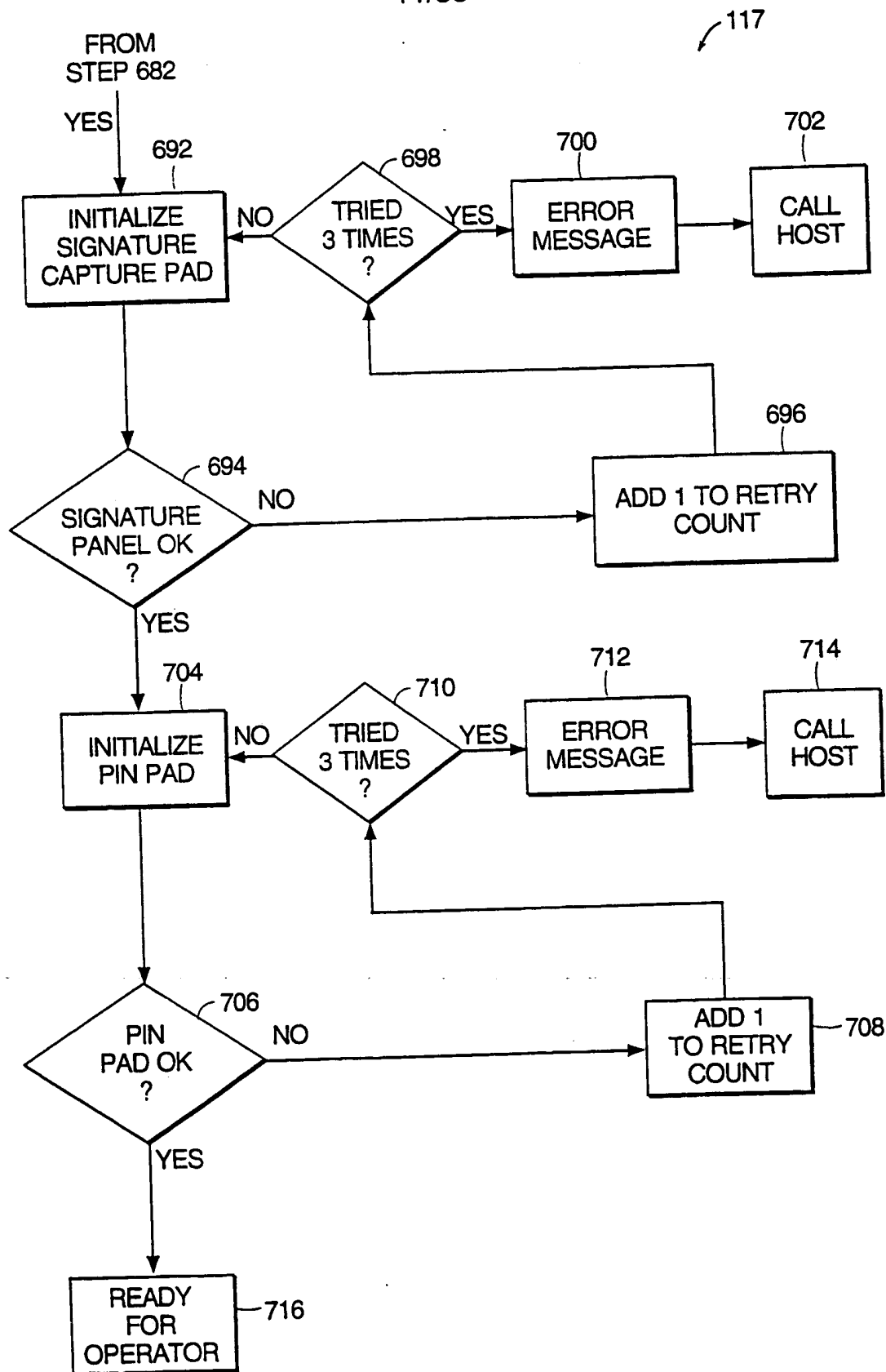


FIG. 9

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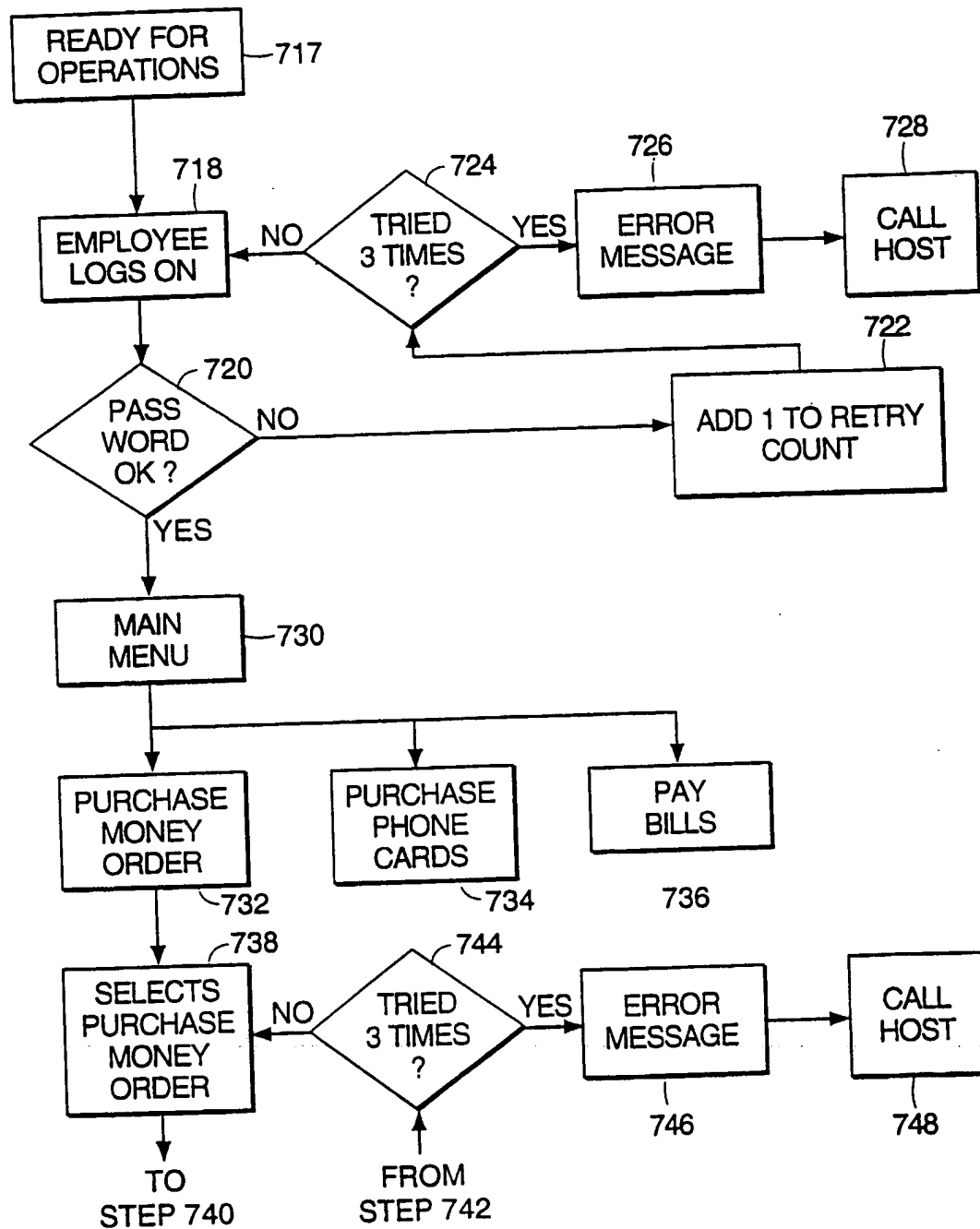


FIG. 10

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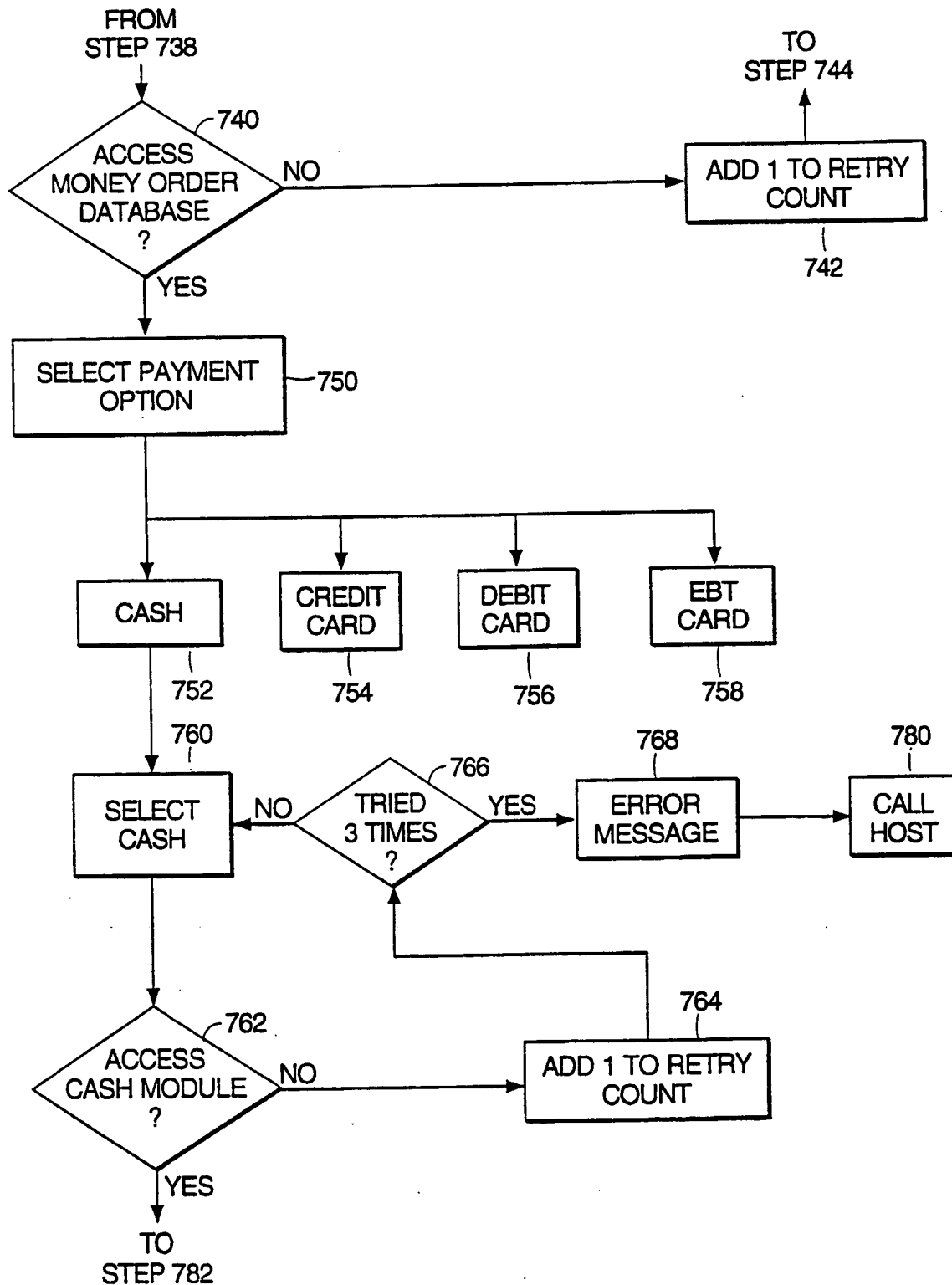


FIG. 11

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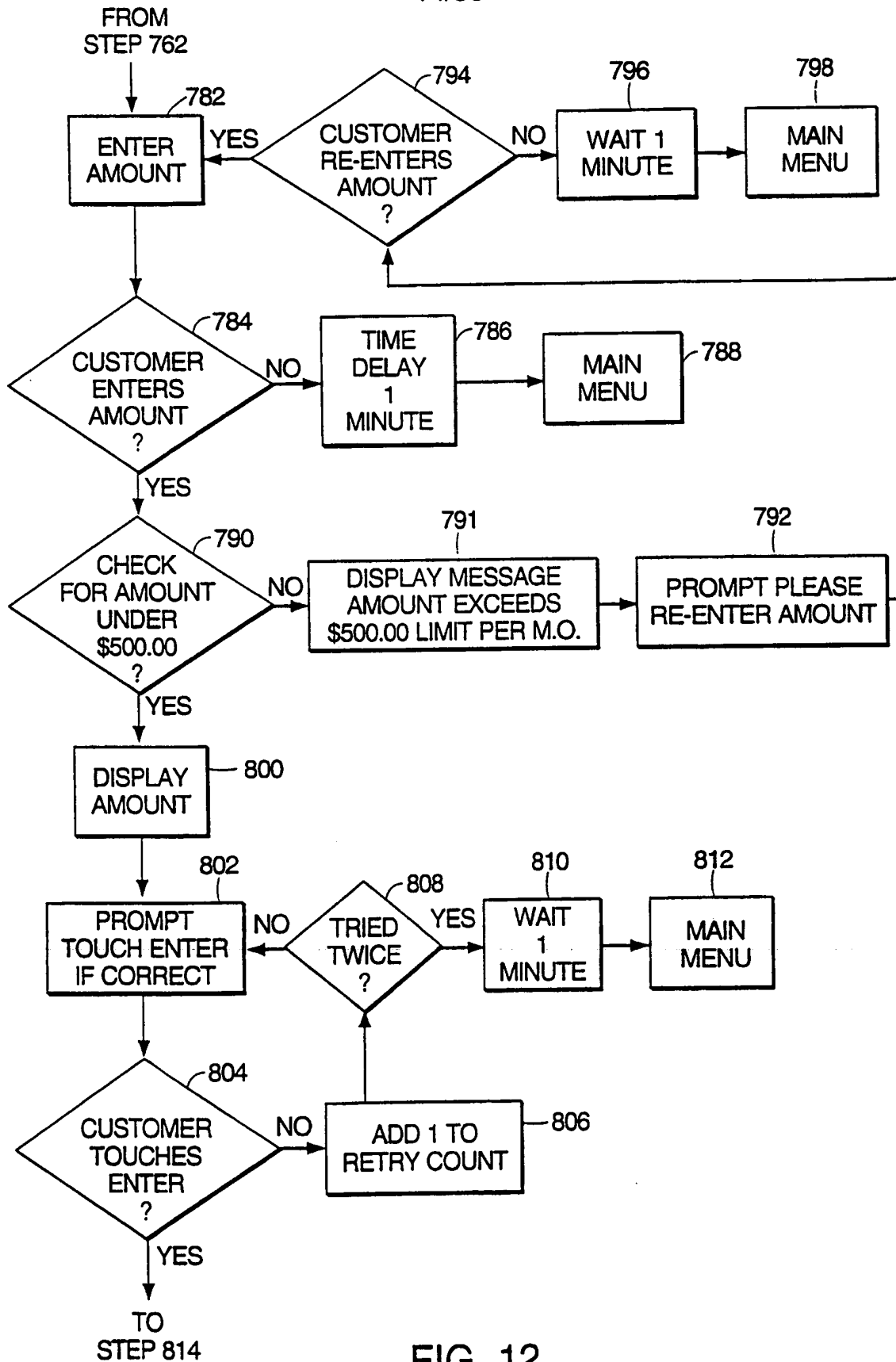


FIG. 12

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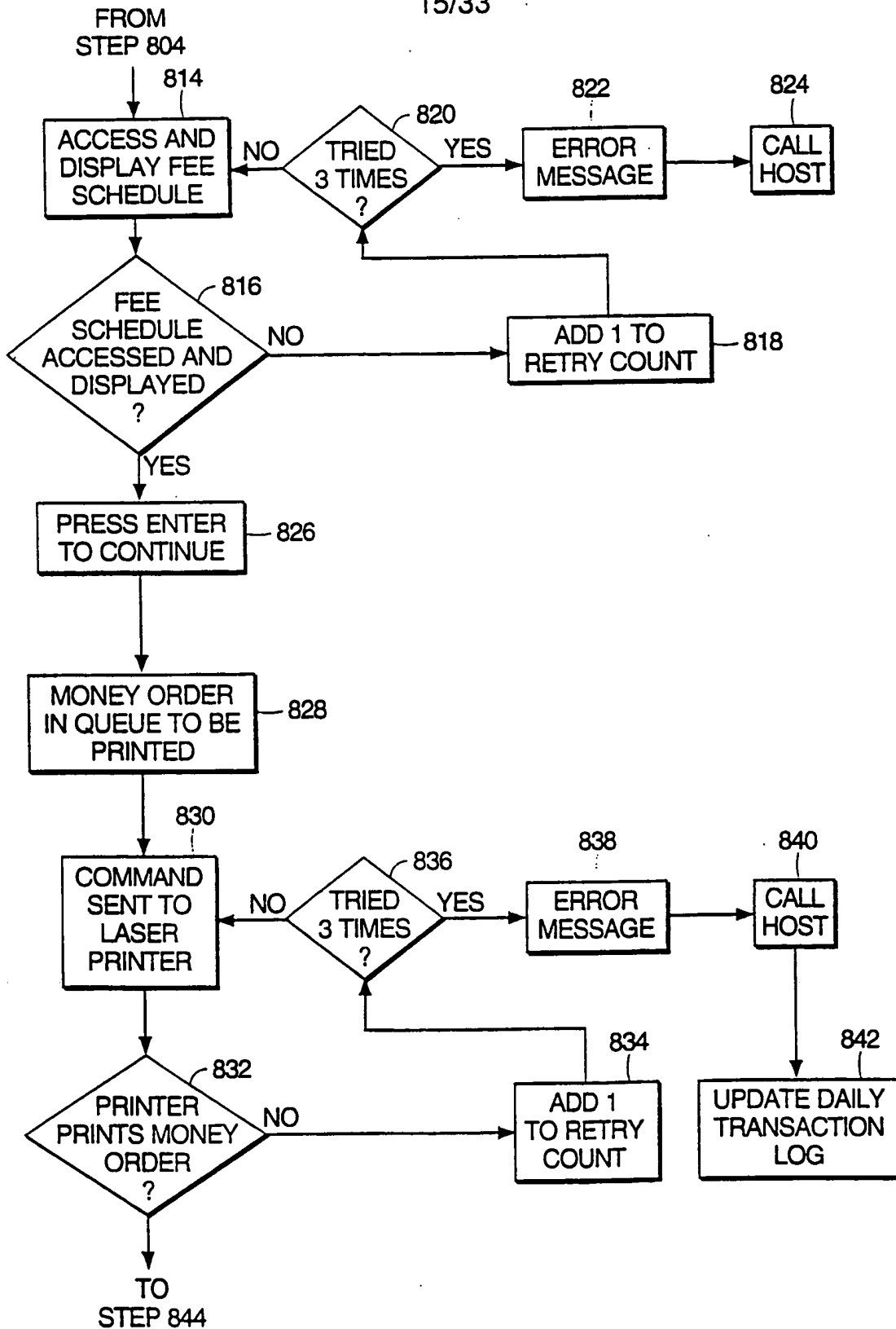


FIG. 13



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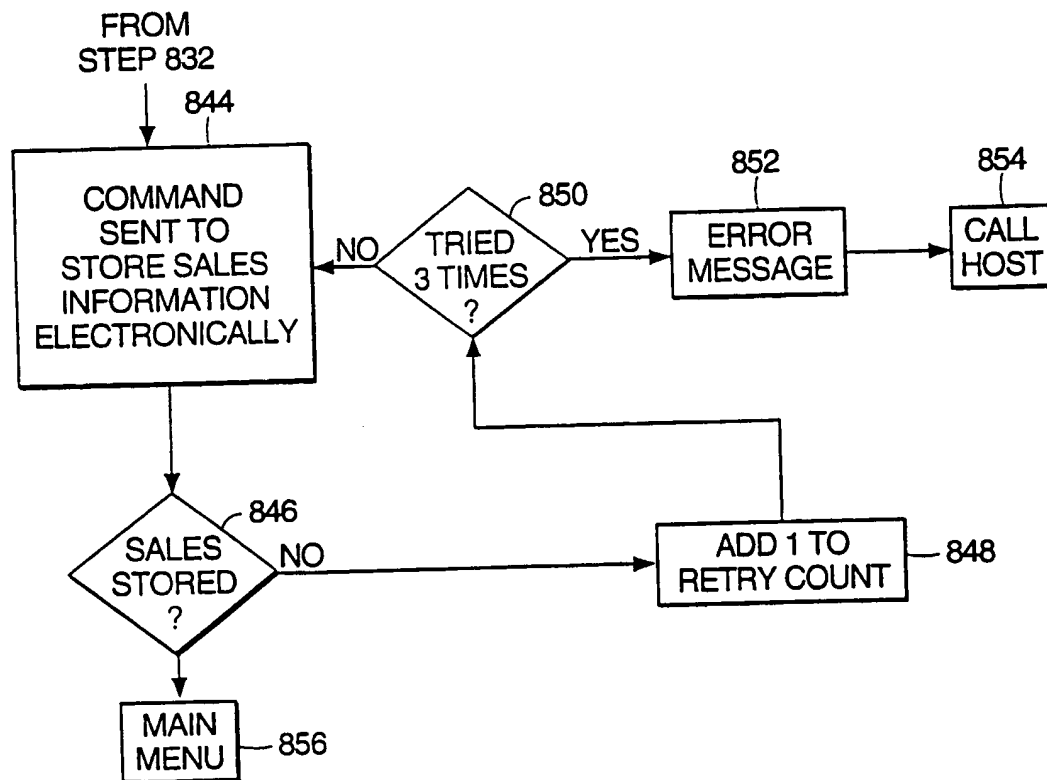


FIG. 14

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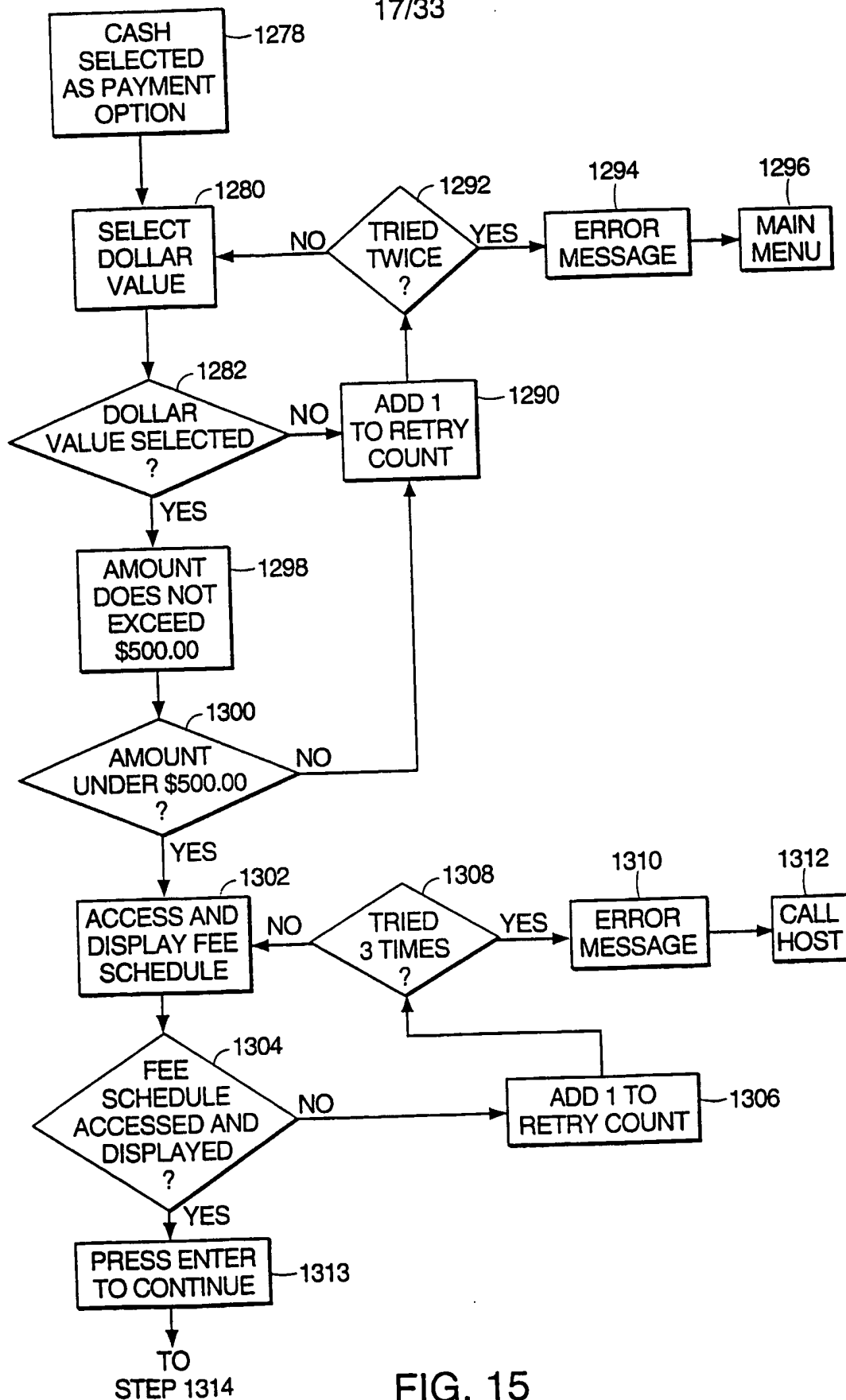


FIG. 15

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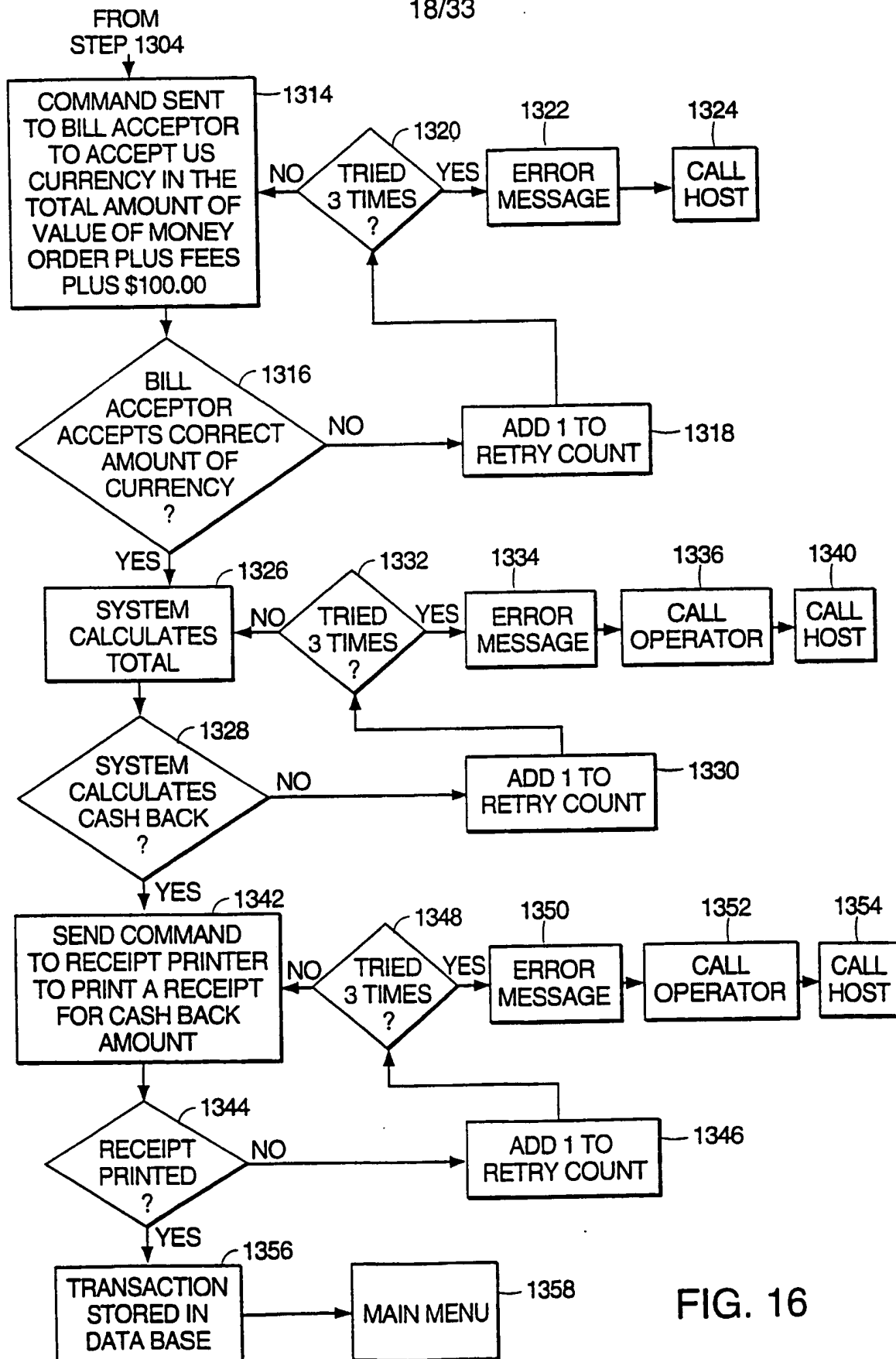


FIG. 16

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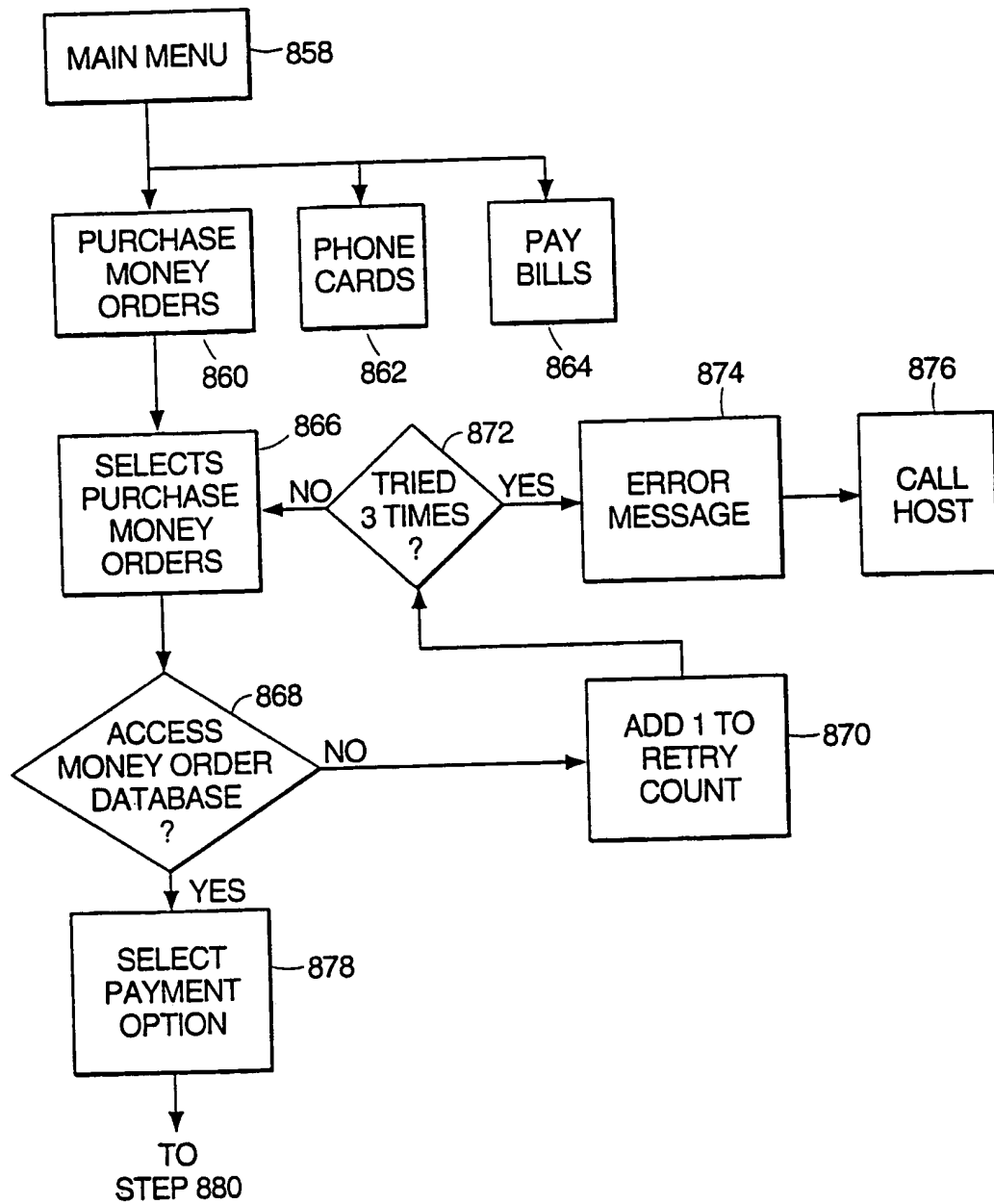


FIG. 17

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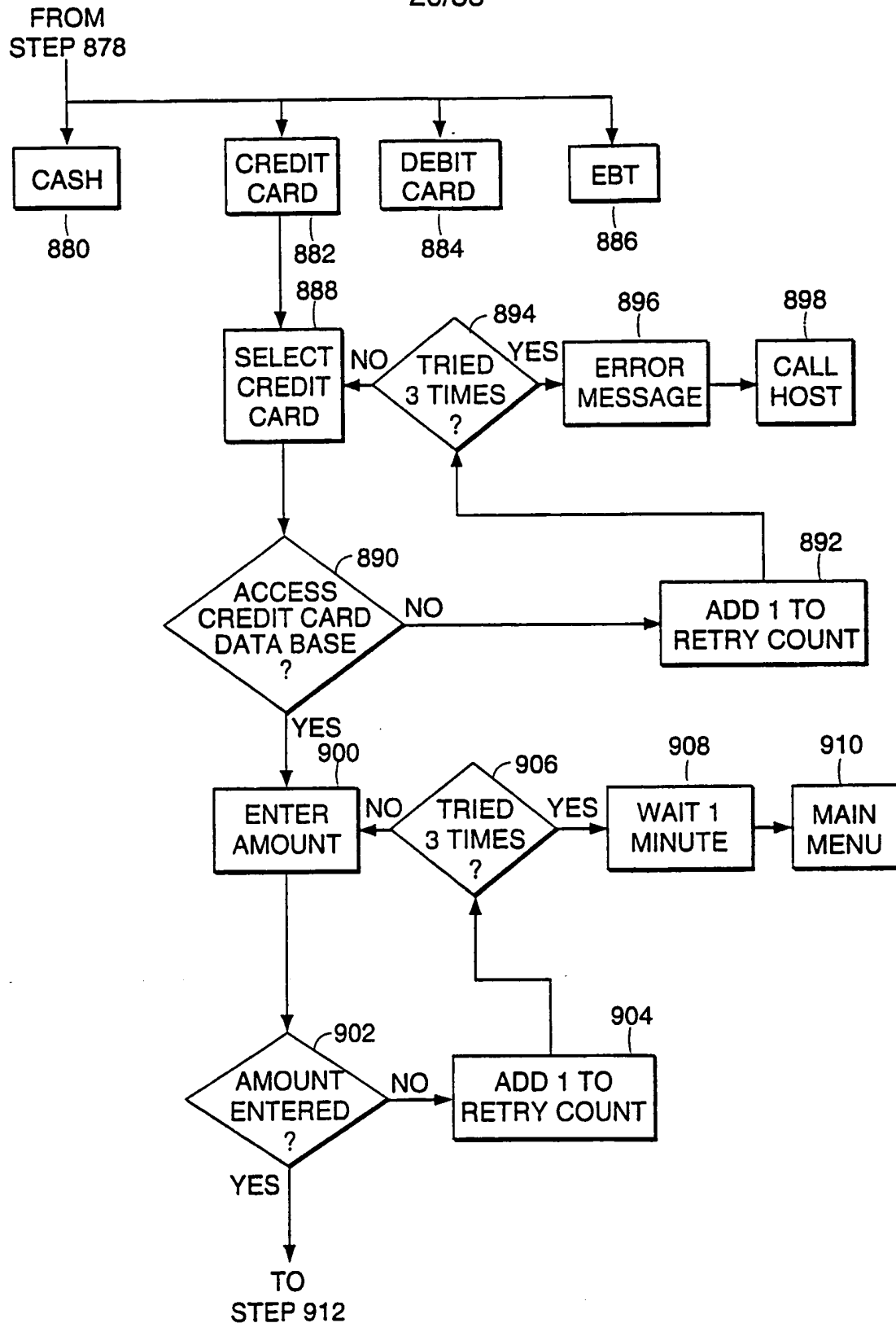


FIG. 18

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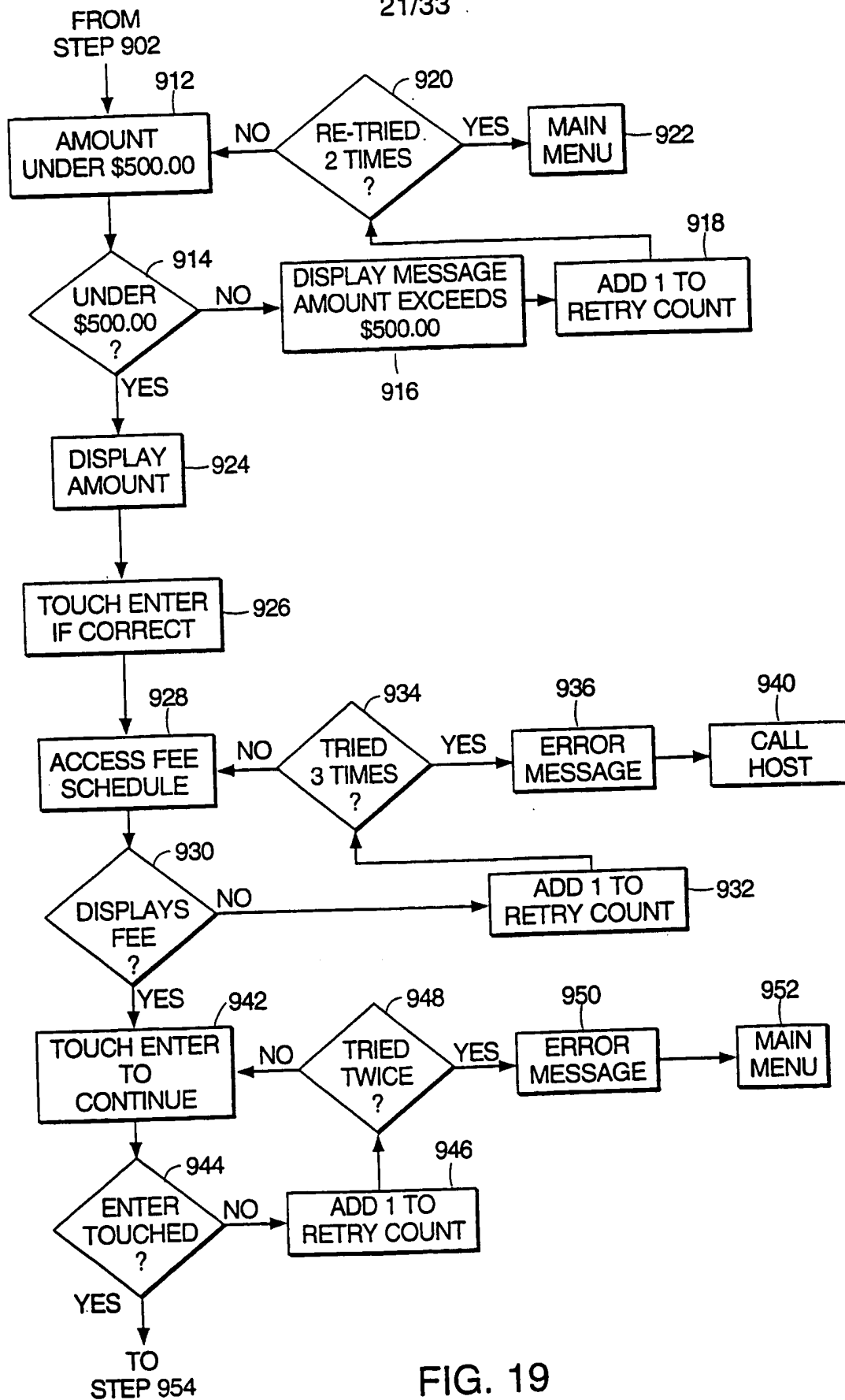


FIG. 19

SUBSTITUTE SHEET(Rule 26)

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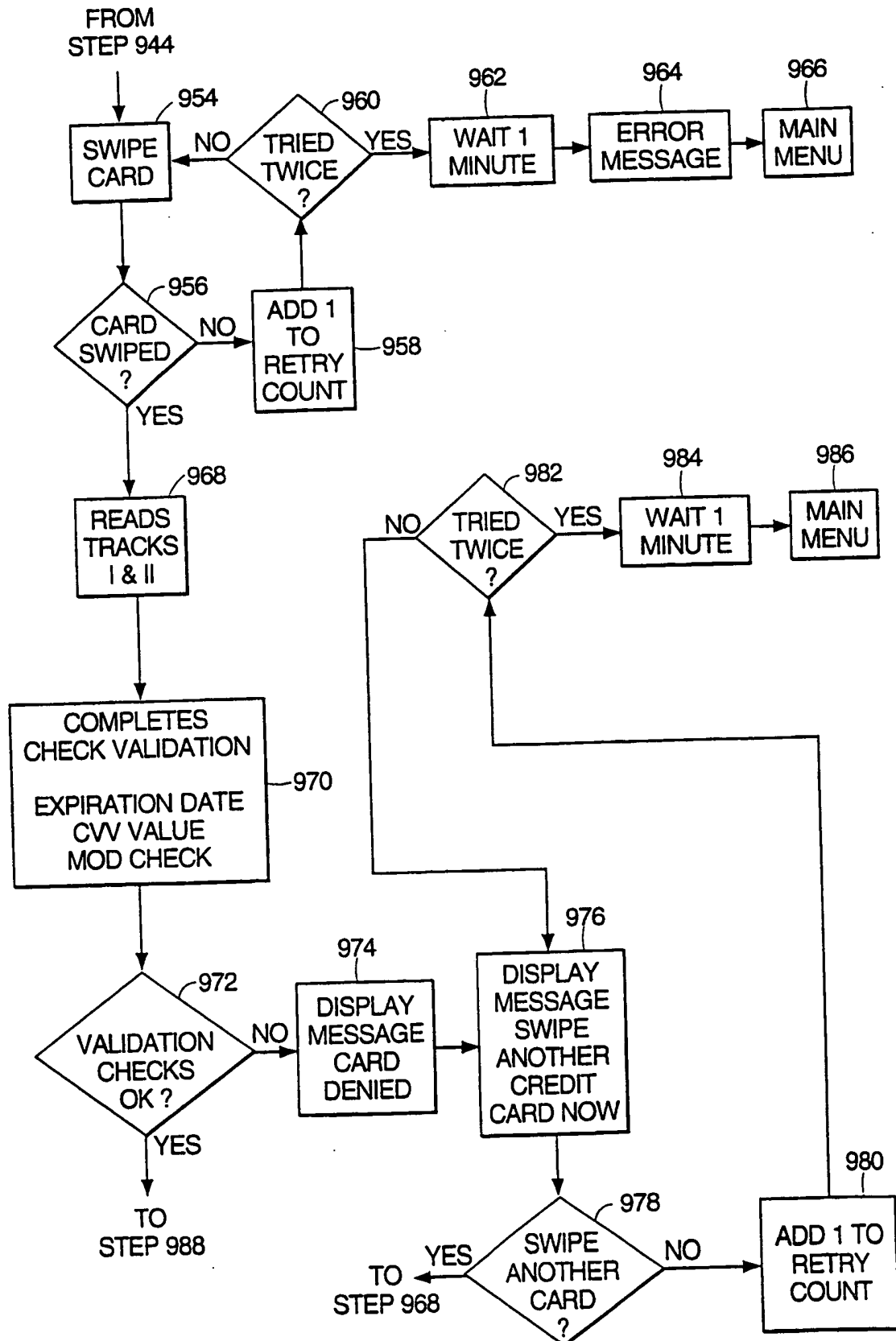


FIG. 20

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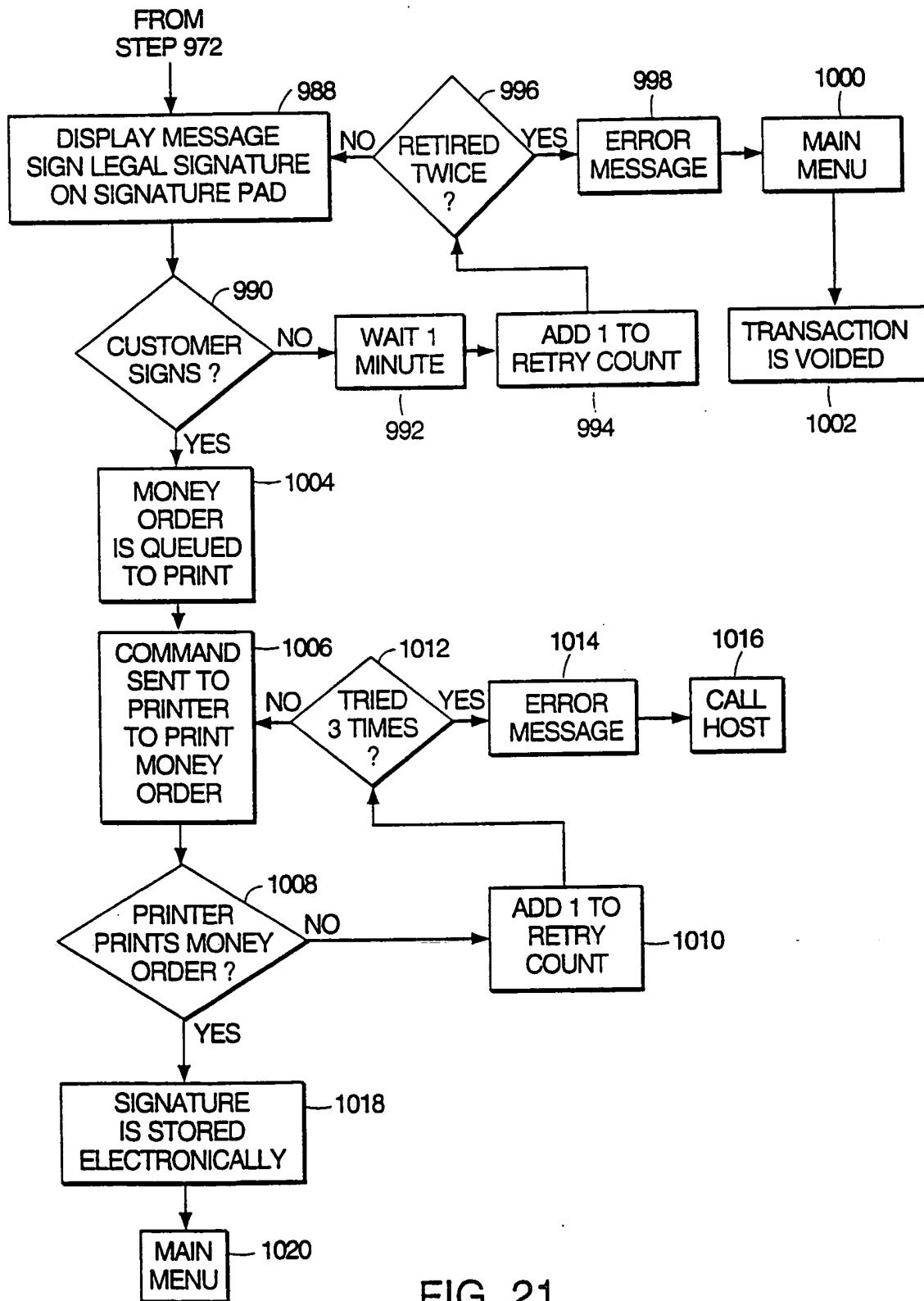


FIG. 21



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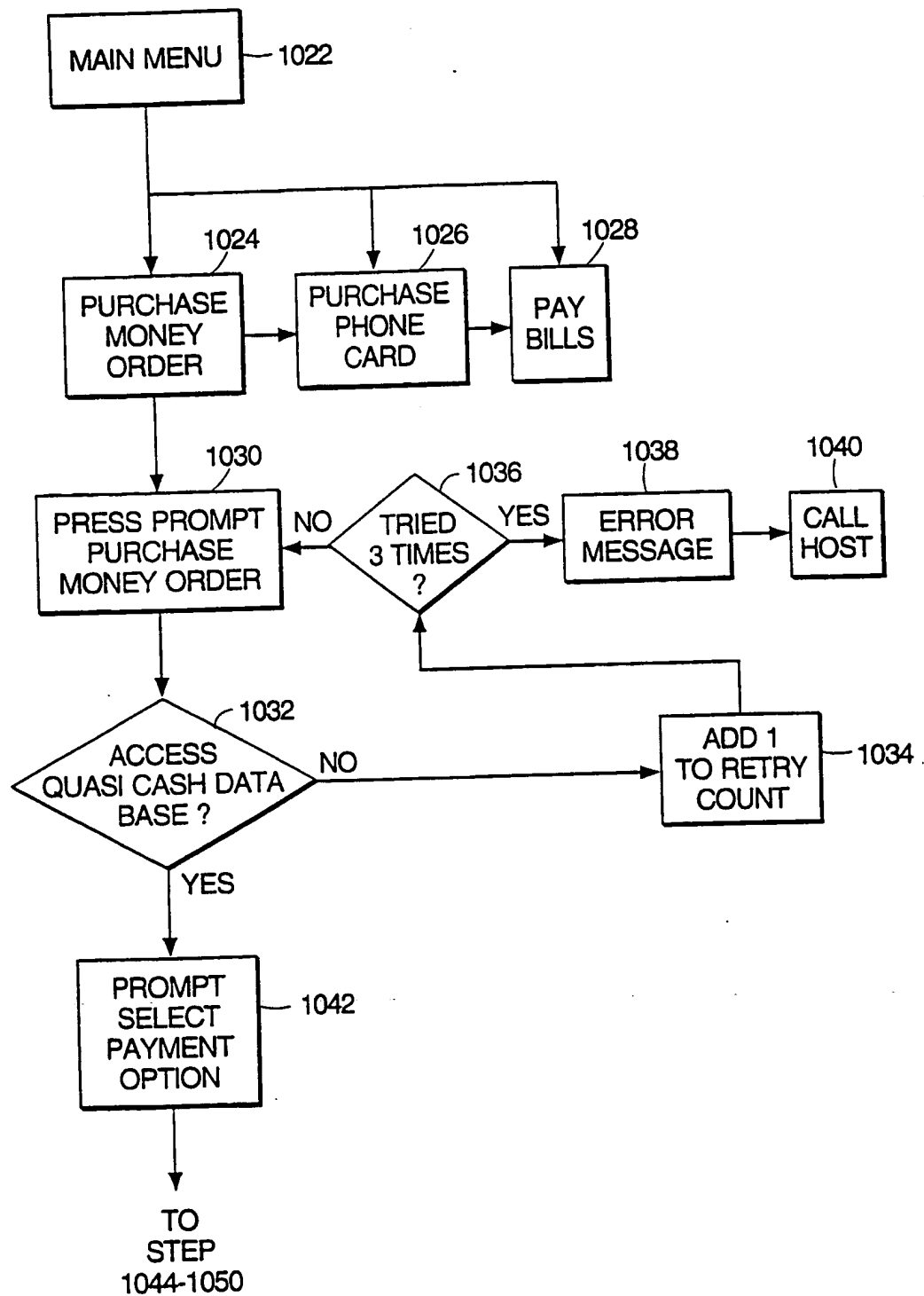
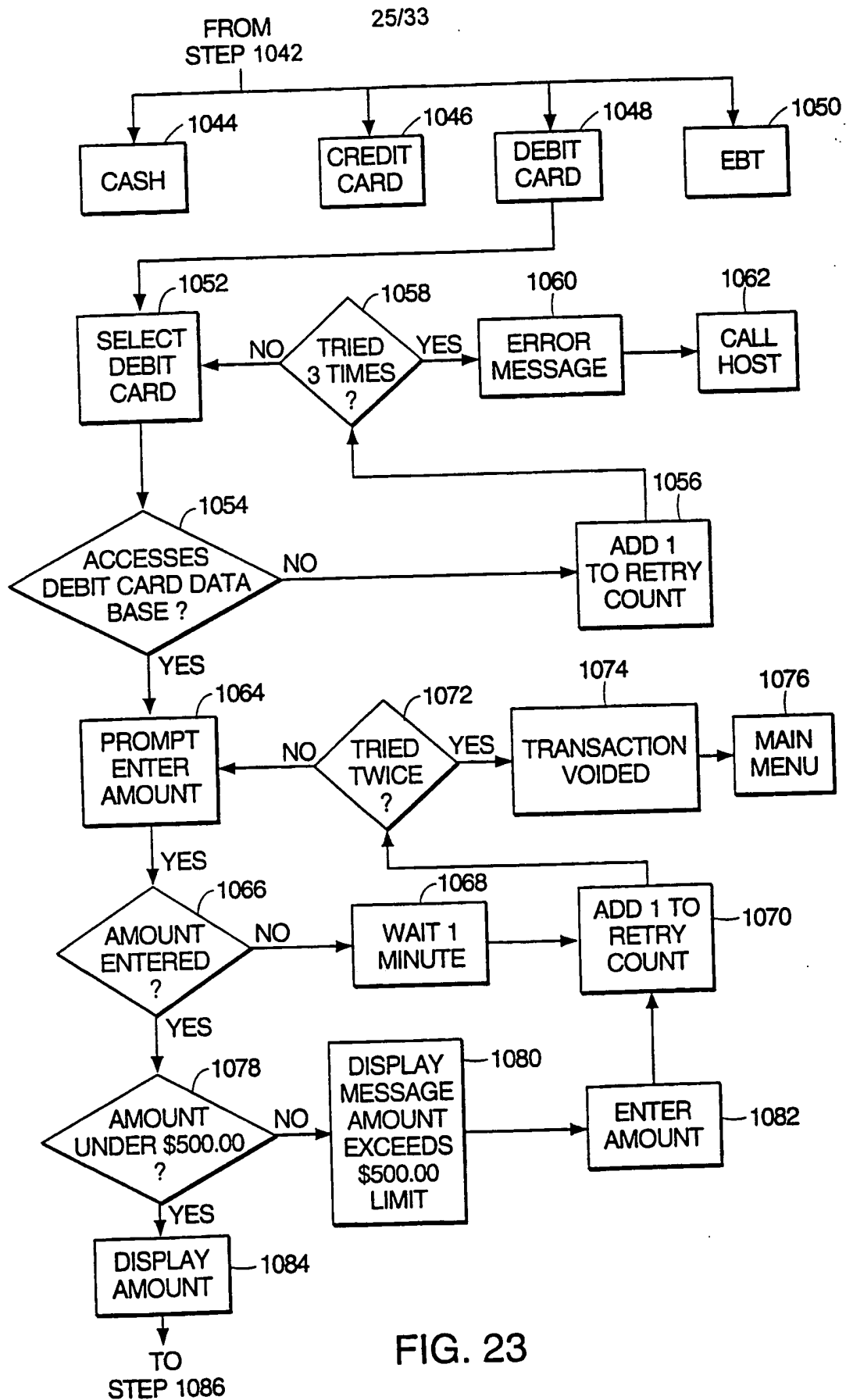


FIG. 22



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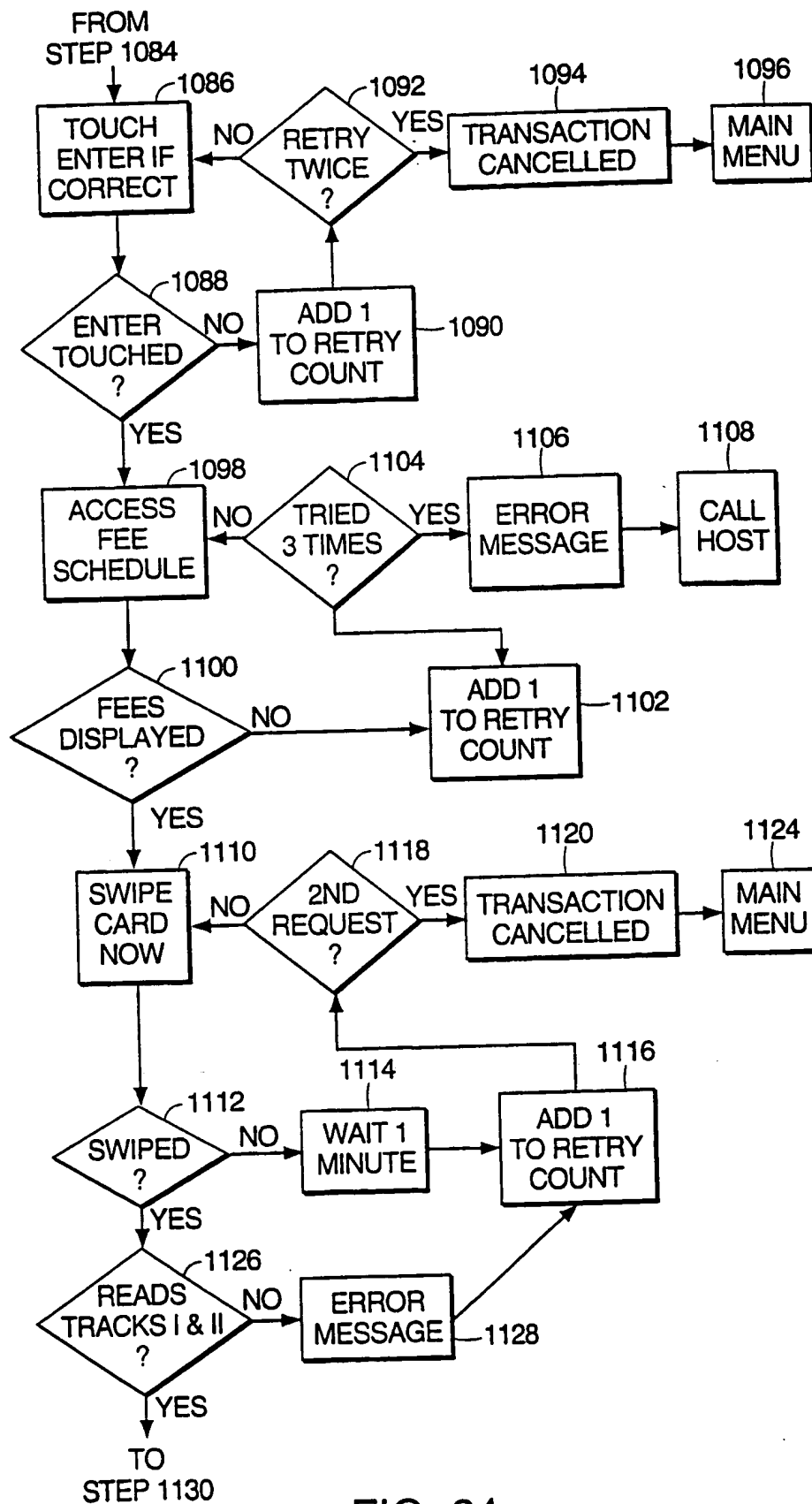


FIG. 24

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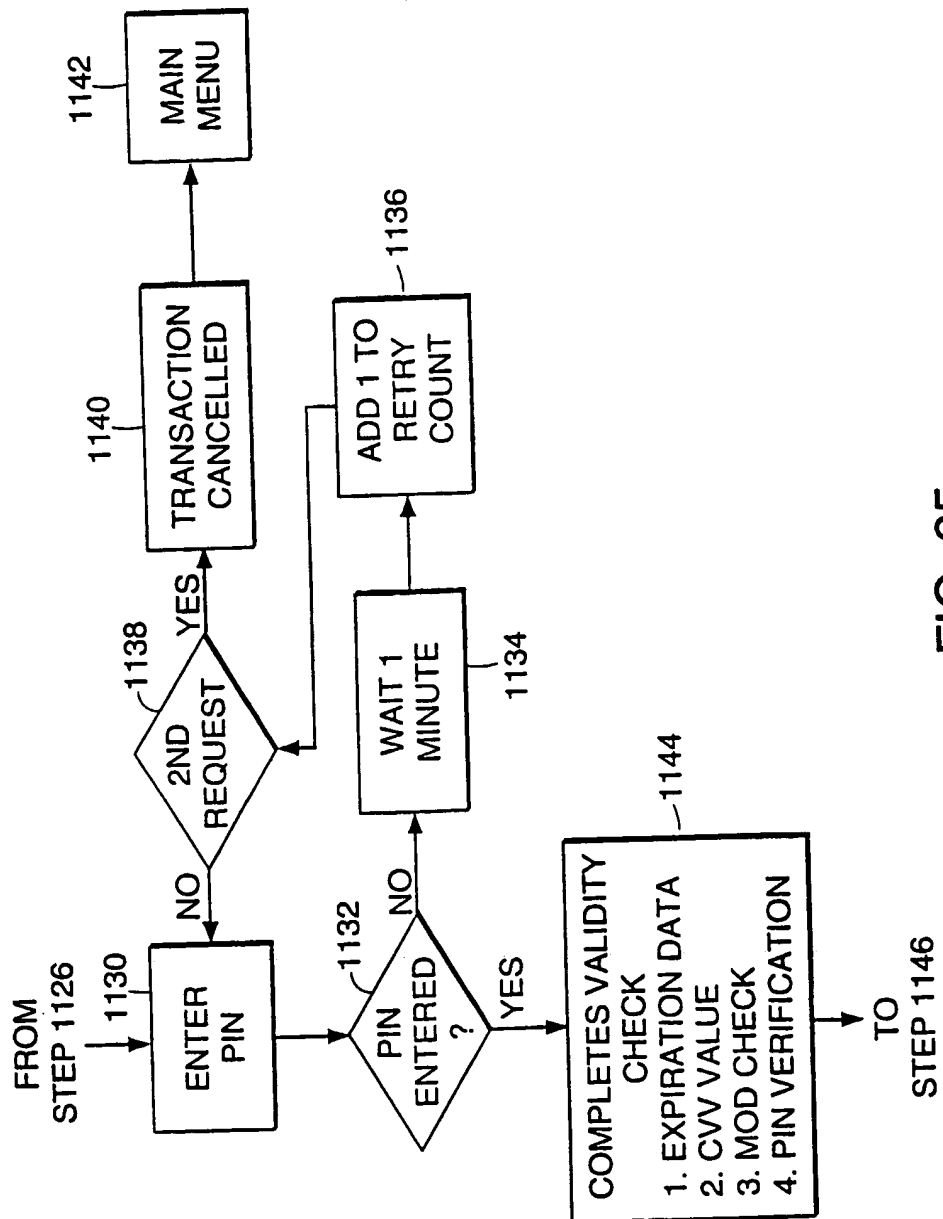


FIG. 25

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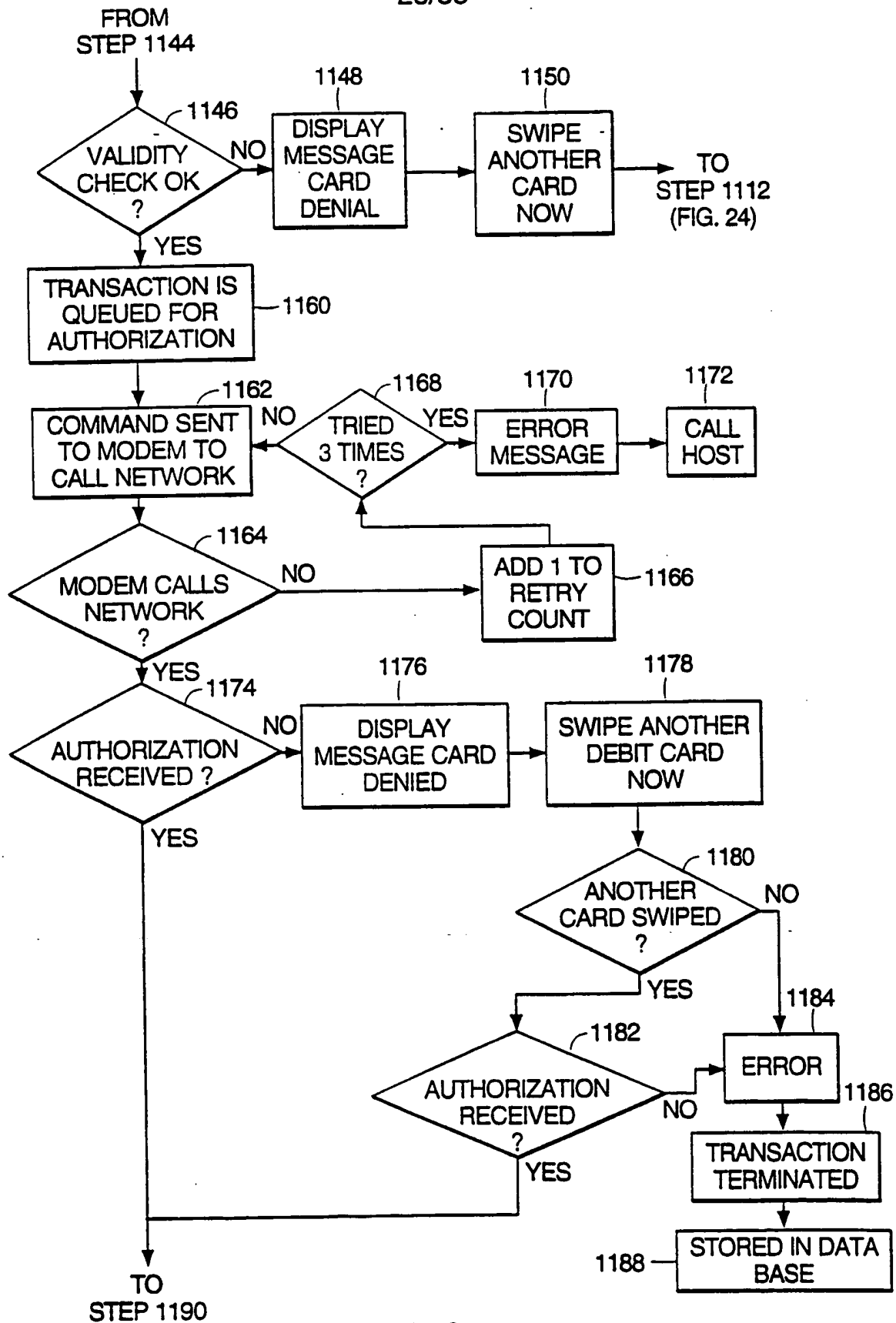


FIG. 26

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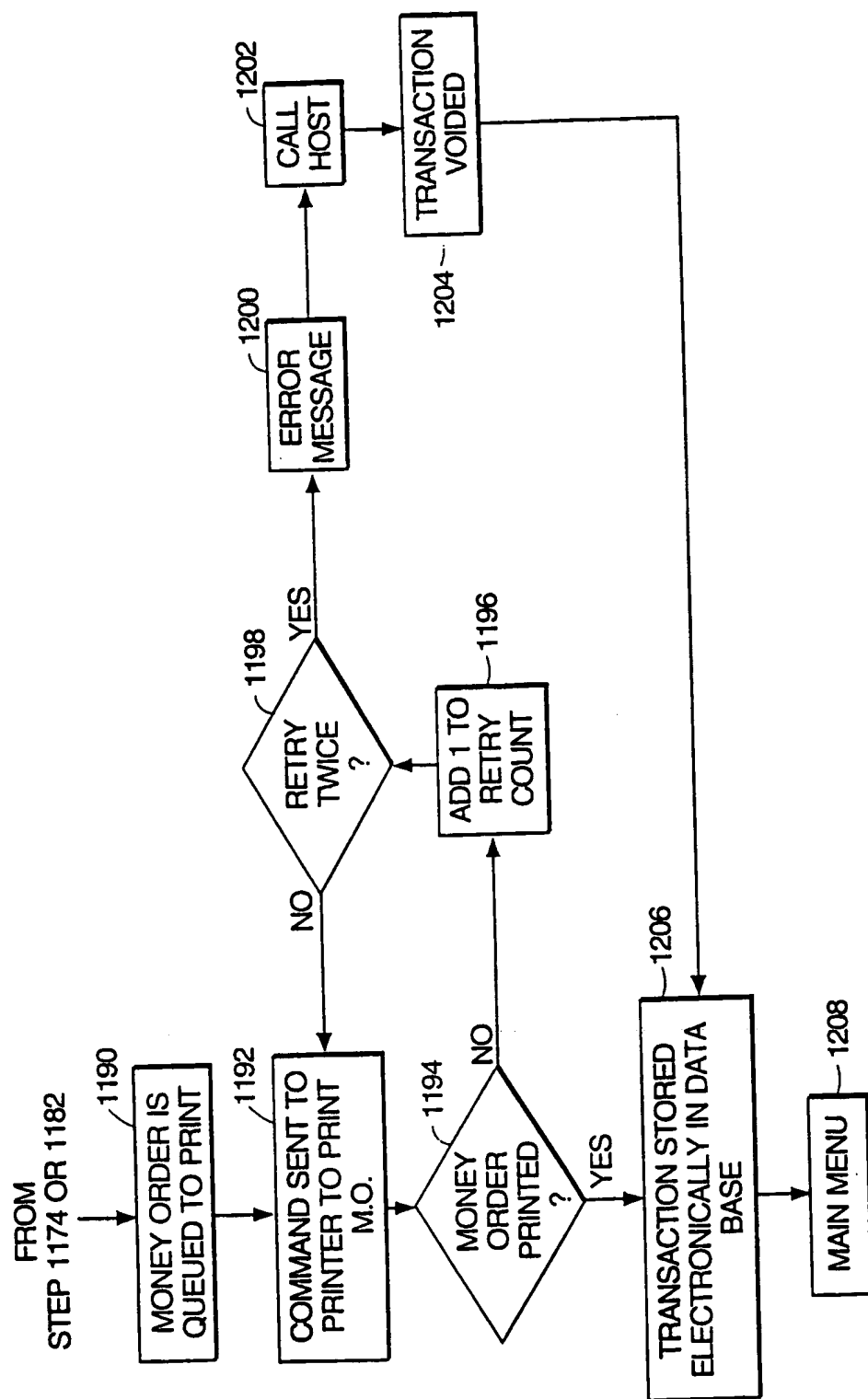


FIG. 27

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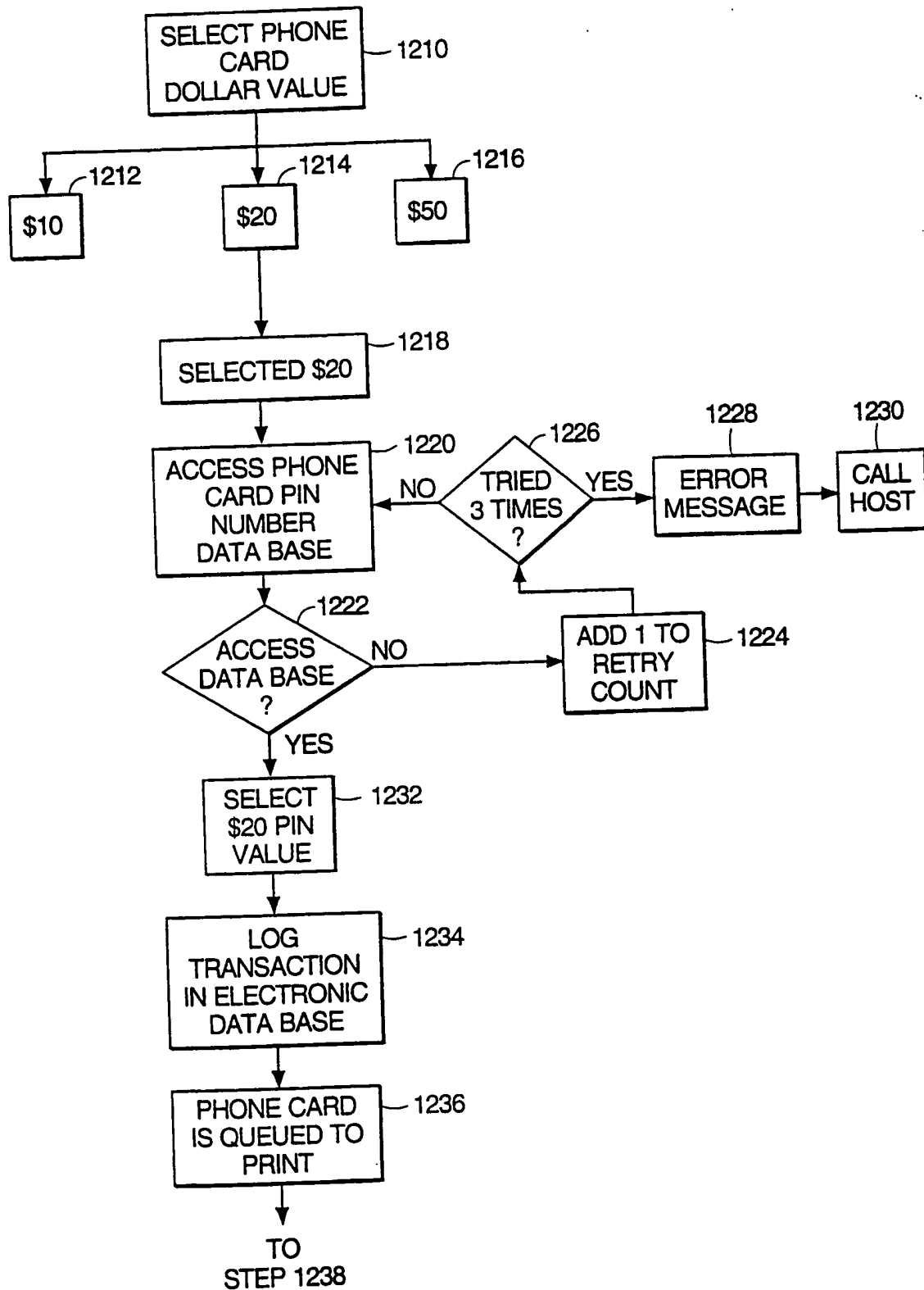


FIG. 28

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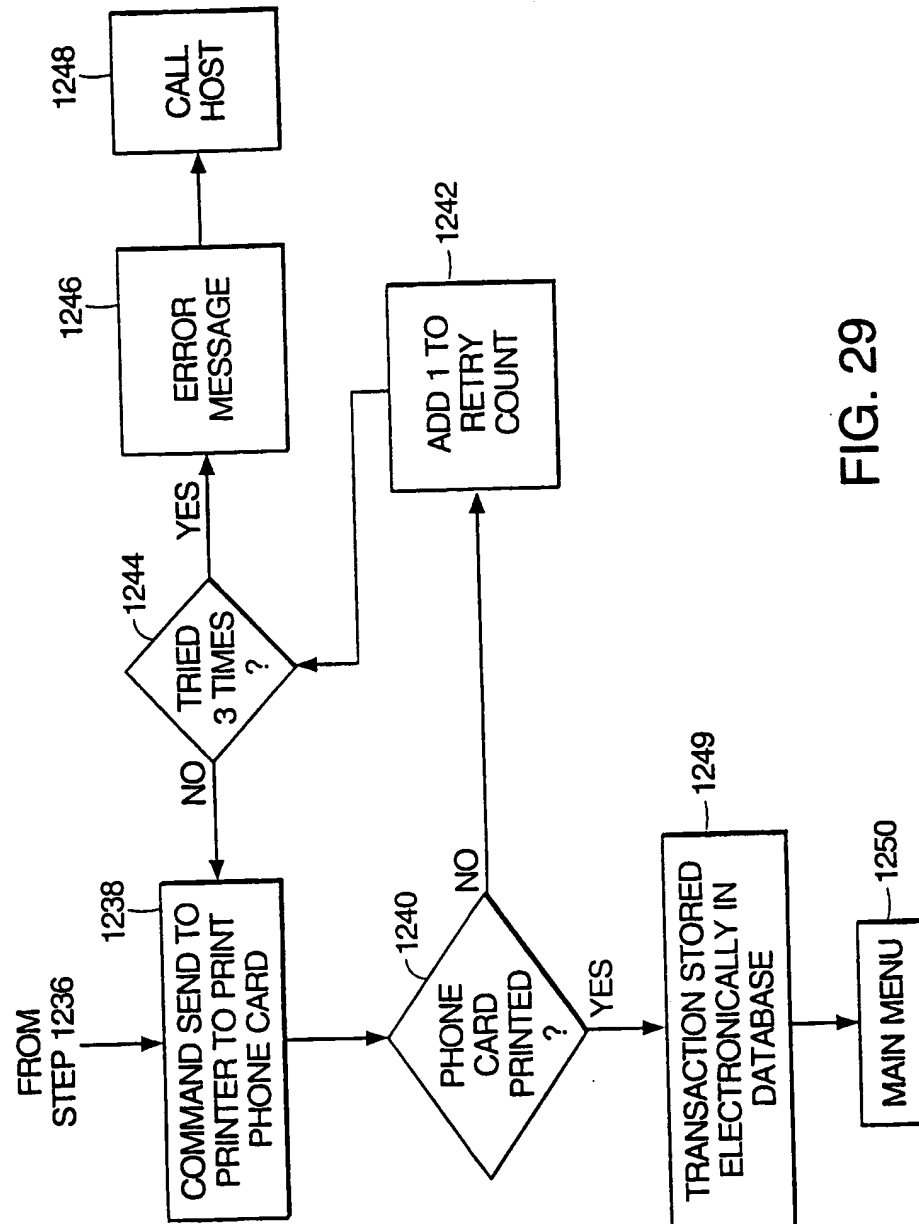


FIG. 29



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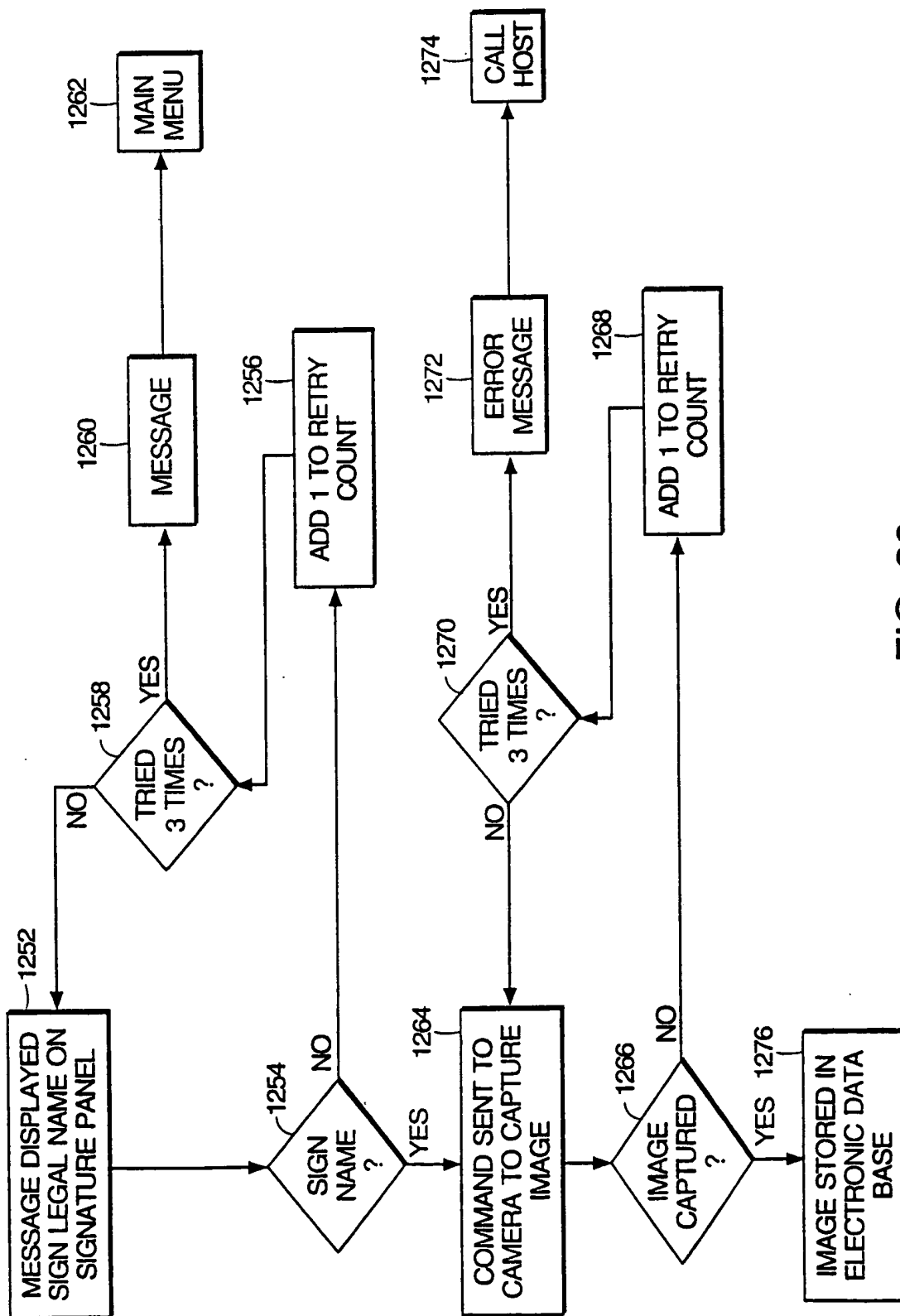


FIG. 30

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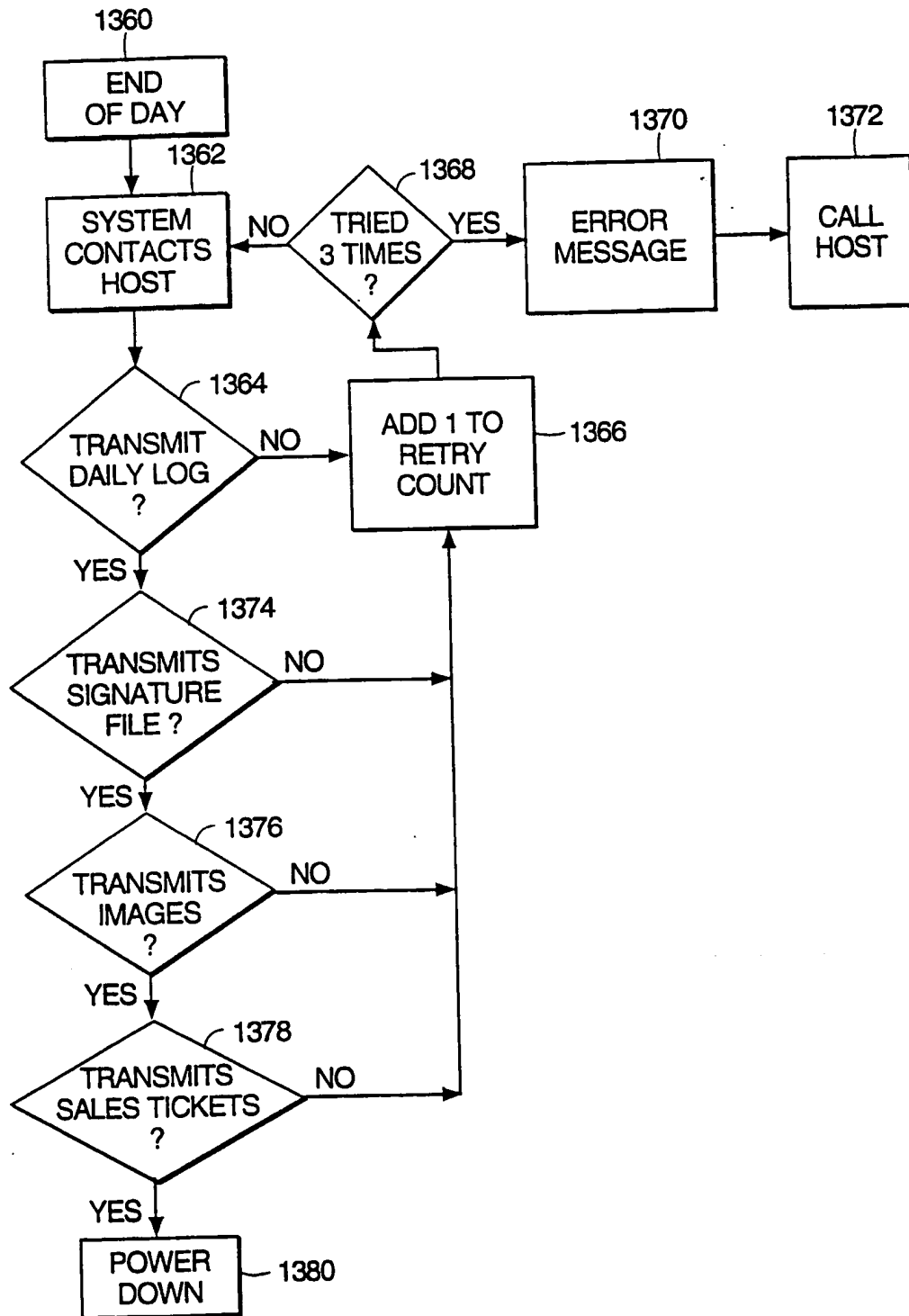


FIG. 31

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/26725

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 15/00, 15/30, 17/60; G06K 5/00

US CL : 235/379, 380; 283/67; 705/39, 41

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 235/379, 380; 283/67; 705/39, 41, 43

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, WEST

search terms: money order, phone card, ATM, transaction

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 5,696,908 A (MUEHLBERGER et al) 09 December 1997, col 4, lines 36-39; col 5, lines 13-40; col 6, lines 3-60; col 7, lines 4-7; col 8, lines 18-29.	3-5, 15, 17-18, 26-27, 29-33, 40-41, 44 ----- 1-2, 6-14, 16, 19-25, 28, 34-39, 42



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

10 FEBRUARY 1999

Date of mailing of the international search report

11 MAY 1999

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
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Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

JAMES W. MYHRE

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Joni Hill

## INTERNATIONAL SEARCH REPORT

 International application No.  
 PCT/US98/26725

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,570,465 A (TSAKANIKAS) 20 October 1996, col 11, lines 40-43; col 13, lines 1-20 and 60-67; col 15, lines 65-67; col 16, lines 1-5.	1, 2, 6, 7, 12-14, 17, 18, 20, 25,, 27, 28, 31, 32, 33, 34, 39, 41, 42, 45, 46
Y	US 5,686,713 A (RIVERA) 11 November 1997, col 4, lines 2-61 and col 5, lines 4-50.	1, 2, 6-11, 16, 19-24, 27, 29, 31, 33-38, 41, 43, 45, 46
Y	US 4,625,275 A (SMITH) 25 November 1986, col 1, lines 40-54; col 2, lines 9-21; col 3, 11-14; col 5, lines 4-7 and 65-67.	1, 2, 6, 7, 12, 17-19, 20, 29, 31-34, 43, 45, 46
Y	US 4,894,784 A (SMITH) 16 January 1990, col 1, line 40 through col 5, line 67.	1, 2, 6, 7, 12, 17-19, 20, 29, 31-34, 43, 45, 46
Y	US 5,014,212 A (SMITH) 07 May 1991, col 1, line 40 through col 5, line 67.	1, 2, 6, 7, 12, 17-19, 20, 29, 31-34, 43, 45, 46
Y	US 5,021,967 A (SMITH) 04 June 1991, col 1, line 40 through col 5, line 67.	1, 2, 6, 7, 12, 17-19, 20, 29, 31-34, 43, 45, 46
Y	US 5,647,677 A (SMITH) 15 July 1997, col 1, line 40 through, col 5, line 67.	1, 2, 6, 7, 12, 17-19, 20, 29, 31-34, 43, 45, 46